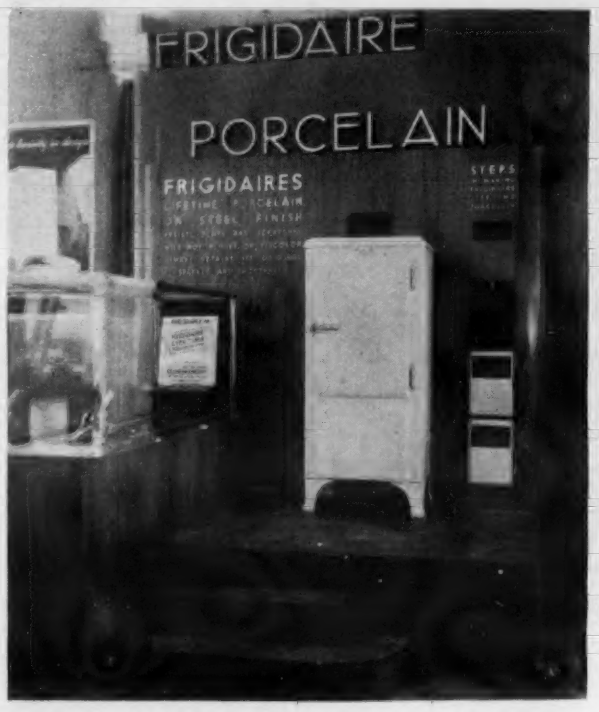
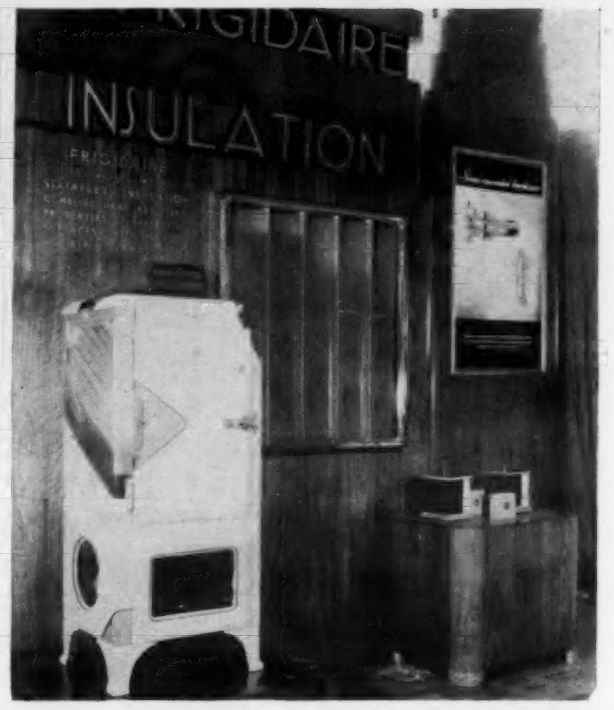
# Frigidaire and Graybar Are Featured in Exhibits—New Type Trucks Used To Display Products—Personalities in Industry

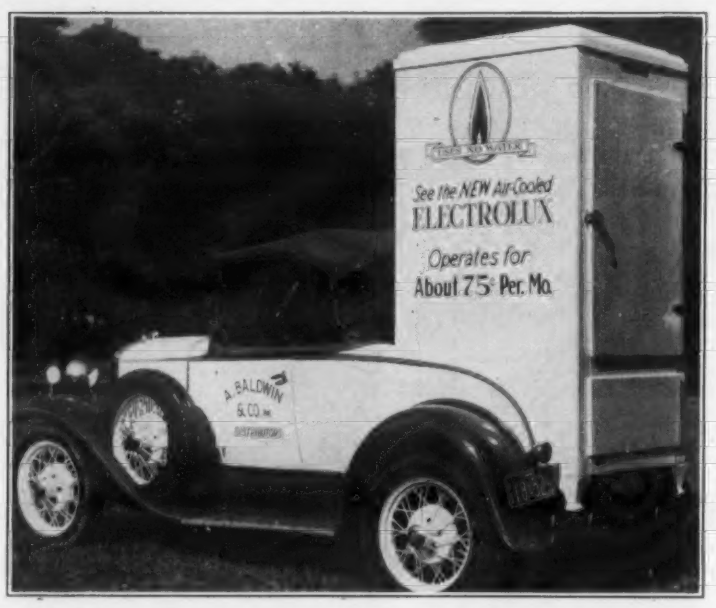



Frigidaire's well-known "continuous cannonading" test of its porcelain enamel forms part of its exhibit at A Century of Progress exposition.

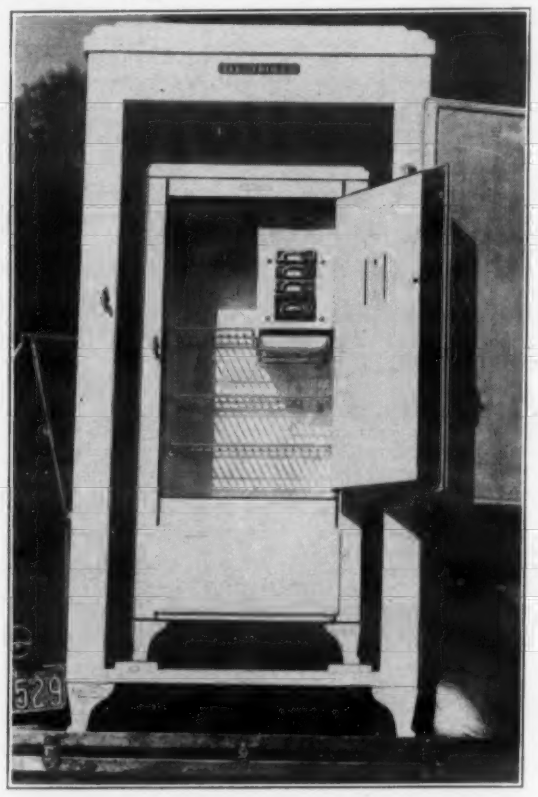
A demonstration of Graybar Ilg-Kold's fast-freezing unit was a feature of a recent exhibit at the Commonwealth Edison Co. showrooms in Chicago. As the Ilg compressor runs continuously until ice is frozen and then shuts off it was possible to time the freezing period by means of a Telechron clock. Visitors were invited to guess as to the probable freezing time.



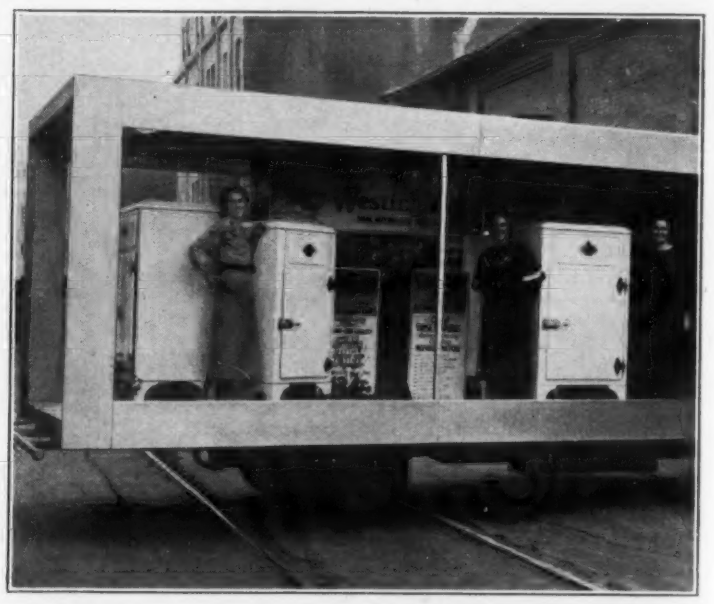

Part of the cabinet construction has been removed from this Frigidaire refrigerator to demonstrate Stataflex insulation to World's Fair visitors.




A Baldwin & Co., Inc., New Orleans distributor for Electrolux, draws attention to the new air-cooled Electrolux with this novel display truck. The big box is just a "dummy," serving to protect a smaller operating model inside from the direct rays of the sun, which "down New Orleans way" generate a 137° F. temperature. The big model is insulated and maintains an interior temperature of about 85° F.




Here, somewhat in the manner of a baby kangaroo, is the demonstrator. Air is taken in through louvres in the top of the outer box and after passing through the condensers is sucked out the bottom.



Westinghouse Electric Supply Co. of southern California used this glass enclosed display truck in its presentation of spring and summer sales plans to dealers. On the day following a meeting the truck was operated through the streets of the dealer's town, which stunt resulted directly in the sales of two or more refrigerators in the towns which it "played." Pretty girls who rode with the truck were an added attraction.

Dave Rubinoff (left) of radio fame visits the Majestic exhibit at the Newburgh, N. Y., refrigeration show. Pictured with him is Mr. Rouss of Rouss Radio & Appliance Co., Majestic dealer. Mr. Rubinoff's appearance was one of the entertainment features of the exhibition.

Charles Francis (Slugger) Coe, well-known writer, has found it easy to master the mysteries of the kitchen since he has had a General Electric range and dishwasher installed in his Bronxville, N. Y., home. In fact he seems to have turned demonstrator for Dinah, his cook.

R. C. Cosgrove (with pipe) Westinghouse refrigeration head, examines the sales plan of the Mississippi Power & Light Co., as W. L. Southwell, merchandising manager, southeastern district, explains the plan, and S. H. Pittmann (right), merchandising advertising manager listens.

THE NEWSPAPER OF THE INDUSTRY

# ELECTRIC REFRIGERATION NEWS

WRITTEN TO BE READ ON ARRIVAL

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## 30 DISTRIBUTORS PLAN STEWART-WARNER DRIVE

### D'Olive Appointed to Direct Refrigeration Sales Division

By George F. Taubeneck

CHICAGO—It's a New Deal for Stewart-Warner, and refrigeration is one of the aces in the reshuffled deck, distributors of Stewart-Warner products were told during a three-day meeting held at the factory here June 7, 8, and 9.

Possibilities and plans for selling electric refrigerators in the extended 1933 season were discussed Friday by Charles R. D'Olive, new manager of the refrigeration department.

Some 30 of the Stewart-Warner distributors now sell Stewart-Warner refrigerators, and practically all had representatives at Mr. D'Olive's meeting.

Executives of the highly successful Alemite division of Stewart-Warner are now in charge of the entire Stewart-Warner Corp. The proxy fight which was instituted a short time ago by a minority group intent upon keeping the new management from taking office has been ended and the old Alemite officers have "everything under control."

The new deal brought to the general managership J. E. Otis, Jr., who was formerly manager of the Alemite division. F. A. Hiter, formerly sales manager of the Alemite division, is now general sales manager of the Stewart-Warner Corp.

Believing that it was in the cards for refrigeration to become a highly important division of the Stewart-Warner Corp., Messrs. Otis and Hiter immediately sent for Mr. O'Olive to head up refrigeration activities.

Before joining Stewart-Warner a short time ago, Mr. D'Olive was sales manager of Mayflower refrigerators for Trupar Mfg. Co. He succeeded L. G. Lindsay, who resigned in April to enter the air-conditioning business. To take this position Mr. D'Olive was called in from the eastern territory, where he had been a Mayflower field representative.

## LARKIN DESCRIBES FINNED COILS TO N. Y. ENGINEERS

NEW YORK CITY—Two topics were treated in talks before the New York section of the National Association of Practical Refrigerating Engineers here May 19. First was on the use of carbon dioxide as a refrigerant, by A. U. Zimmerman; second was on finned coils for commercial refrigeration, by Lester U. Larkin, president of Larkin Refrigerating Corp.

Carbon dioxide came into use as a refrigerant about 25 years ago, Mr. Zimmerman related, when it was found to be less dangerous than ammonia. It was discovered, however, that to built a $CO_2$ machine cost from 15 to 20 per cent more than an ammonia machine, due to the warm condenser water and the difficulty of keeping the gas in the system at 1,000 lbs. pressure.

Nevertheless $CO_2$ plants are preferred in many marine installations because practically any metal can be used in the system, the sea water having no corrosive effect on a condenser made of copper or brass, Mr. Zimmerman stated. The refrigerant is also recommended for theaters, hospitals, hotels, etc. due to its non-toxic characteristics.

Another objection to the refrigerant, outlined by Mr. Zimmerman, is the fact that when the liquifaction temperature exceeds the critical tempera-

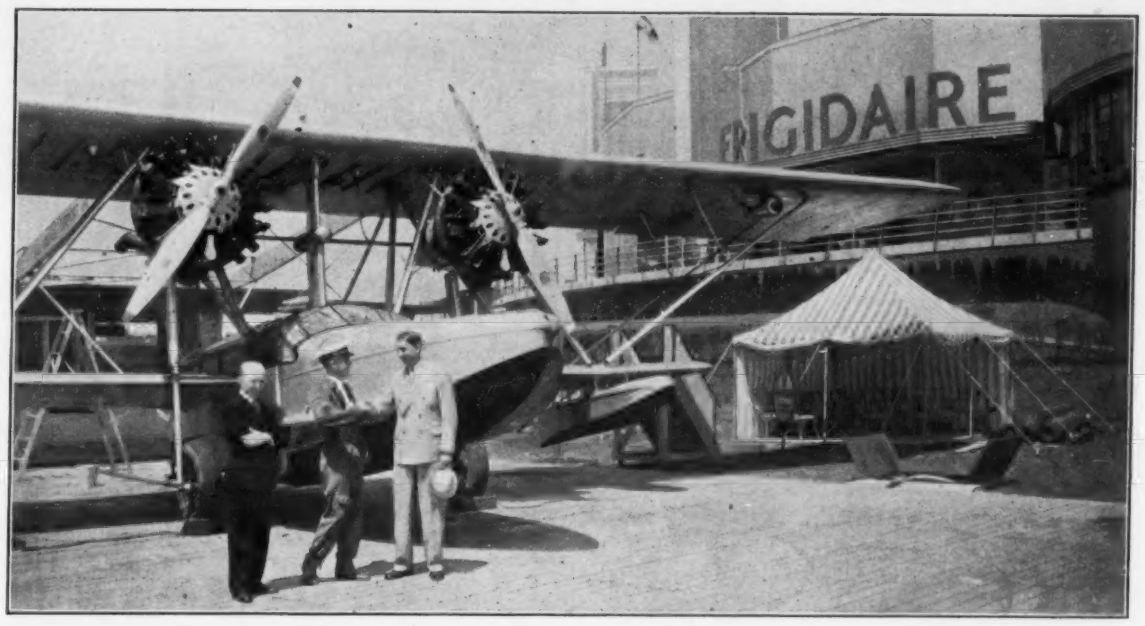
(Concluded on Page 12, Column 5)

## Hartman to Manage Baker Sales

OMAHA—F. E. Hartman, formerly Omaha district sales manager for Baker Ice Machine Co., has been appointed general sales manager of the company, according to G. M. Sebree, advertising manager.

Mr. Hartmann has been with the Baker company since it was organized, more than 28 years ago.

## Death Plane Which Crashed at World's Fair




Earl Doty (right), advertising manager of Frigidaire Corp., in front of the amphibian, Northern Light, which carried nine persons to death in Chicago Sunday. Alfred Farrell, manager of Frigidaire's window display and exhibits department, is at the left. This plane took off regularly from the heel of the General Motors building.

## RADIO FIRMS PLAN INDUSTRY PROGRAM

CHICAGO—Anticipating passage of President Roosevelt's Industrial Recovery bill, the Radio Manufacturers' Association, meeting here June 5 and 6 for its annual convention, appointed a planning and program committee to represent the radio industry in cooperating with the government if and when the business recovery measure is passed.

W. Roy McCanne, president of Stromberg-Carlson Telephone Mfg. Co., is chairman of the committee. Other members are Paul B. Klugh, vice president of Zenith Radio Corp.; Arthur T. Murray, president of United American Bosch Corp.; and S. W. Muldowny, chairman of the board of National Union Radio Corp.

This group will act as a steering committee, cooperating with all branches of the association in supplying information to the government and in determining procedures to be followed in adapting the radio industry's operations to provisions of the recovery measure.

During its convention the radio association passed a resolution opening its membership to all companies in the industry. All of the organization's board members, officers, executive committeemen, and divisional chairmen were re-elected at the meeting.

## KELVINATOR CONDUCTS AIR-CONDITIONING SCHOOL

DETROIT—Kelvinator commercial salesmen from eight sales districts are here attending a special air-conditioning school, being held to acquaint members of the field organization with the application of Kelvinator's new air-conditioning equipment.

The school is under the direction of C. M. Terry, commercial sales division.

J. A. Harlan, commercial sales manager, explained that Kelvinator's new air-conditioning line is such a radical departure from the accepted type of room cooling that it was felt necessary to give salesmen a special training course to cover the technical side of selling this equipment.

## Stewart-Warner Adds Two to Board

RICHMOND, Va.—Final adjourned stockholders' meeting of Stewart-Warner Corp. held here June 7 elected the director ticket offered by the management by a vote of approximately two to one.

Raising the number on the board from seven to nine, the stockholders selected two new directors, Sidney Adler of Chicago and R. J. Graham of Belleville, Ontario. The other board members, all re-elected, are C. B. Smith, L. H. LaChance, V. R. Bucklin, J. E. Otis, Sr., Ralph M. Shaw, R. J. Dunham, and Eugene V. R. Thayer, all from Chicago.

## Nema Collecting Information For Industry Conference

### An Interview with G. M. Johnston, Chairman Nema Refrigeration Division, By F. M. Cockrell

Monday, June 12, 1933.

*Question*—"Mr. Johnston, in the May 24 issue of ELECTRIC REFRIGERATION NEWS we published your announcement that the Refrigeration Division of National Electrical Manufacturers Association would call a meeting of all manufacturers engaged in the refrigeration industry for discussion of the most effective means of functioning in cooperation under the provisions of the National Industrial Recovery act. According to reports, this law will be passed by Congress this week. Manufacturing executives outside of the NEMA organization have inquired regarding the proposed meeting. Can you make a statement now as to when the meeting will be called?"

*Answer*—"The National Industrial Recovery bill has not yet become a law and we still do not know what its final provisions will be. Considering the many changes which have been discussed in the Senate Finance Committee and on the floor of the Senate

(Concluded on Page 8, Column 2)

## GILFILLAN BUILDS SELF-CONTAINED BEER COOLER

LOS ANGELES—A new self-contained draft beer cooler and dispensing unit is being introduced in the West by Gilfillan Bros., Inc., manufacturer of electric refrigerators and radios here.

The Giltap has a double-section tank holding two half-barrels of beer. There are two draft arms. The tank is refrigerated by copper cooling coils built around its two sections. Located in the bottom of the cabinet is a two-cylinder Gilfillan compressor driven by a 1/6-hp. General Electric capacitor motor.

Overall dimensions of the dispenser are width, 40 in.; height, 51 in.; and depth, 30 in. Cabinet is all-steel, and is insulated in all parts by 3 in. of Insulite and cork. The unit is equipped with a pressure gauge and blow-off valve for regulating pressures in the tank.

Refrigerant flow is regulated by a thermostatic expansion valve. Access to the tank, coils, pressure valve, etc. is gained through the top which is equipped with a hinged lid.

## Georgia Power Sells Quota in ½ Time

ATLANTA—One hundred per cent of quota sold in less than 50 per cent of the contest period is the achievement of branches of Georgia Power Co. competing in the utility's "Hit the Ball" refrigeration sales campaign.

With 26 days of the 50-day contest still to run, companies participating have turned in $250,667 worth of sales.

Augusta division has maintained a strong lead thus far throughout the contest.

## AIR-CONDITIONING DEALER ADDS 30 TO SALES STAFF

CHICAGO — Thirty salesmen are now working in metropolitan Chicago for the Air Conditioning Corp., outlet for General Electric oil furnaces and air-conditioning equipment recently established here. Twenty more salesmen will be added by July 15.

The organization is opening three branches—one in Evanston, one in Oak Park, and the other on Chicago's South Side.

## LOAD BUILDING CONSIDERED BY PUBLIC UTILITIES

### Refrigeration, Ranges, Air Conditioning Discussed

By Elston D. Herron

CHICAGO—More than 1,000 executives of the nation's public utility companies gathered in this city from Monday through Thursday of last week for the first annual meeting of the Edison Electric Institute, where they discussed and heard discussed the problems and progress of this country's electric light and power industry.

The convention was the first general meeting of institute members held since that organization's formation on Jan. 12 of this year to replace the 48-year-old National Electric Light Association which was dissolved early in 1933.

One of the most important addresses delivered before the institute during its four-day convention in Chicago's Palmer House, and certainly the most significant from the standpoint of the organization itself, was that with which George B. Cortelyou of the Consolidated Gas Co. of New York City, president of the institute, opened the meetings.

In it, he stated clearly the aims and policies of the new organization, then launched into a discussion of the tax problem now confronting the electric light and power industry and taxation's relation to utility rate reductions.

Mr. Cortelyou said early in his address that one of the principal considerations leading to organization of the Edison Electric Institute was the "necessity to effect a radical simplification in the size and character of the trade association . . . and to make a corresponding curtailment in its cost."

He continued, "A second factor was the need for an organization having the power to exercise some degree of discipline over its members with respect to their business practices . . . and the constitution of the institute, to which all members must subscribe, places in the hands of the membership committee and board of trustees the needed authority to permit this control.

"Every effort has been made to build simply, but at the same time to provide an adequate foundation for a structure that will meet not only the immediate needs of the industry's

(Continued on Page 6, Column 1)

## WASHING MACHINE GROUP DISCUSSES RECOVERY BILL

CHICAGO—Arriving at what Neil Gallagher, president of the Automatic Washing Machine Co., happily pronounced "the most satisfactory state of unanimity any conference of washing machine manufacturers has ever attained," the American Washing Machine Manufacturing Association met in the Morrison hotel pent house Thursday June 8 to consider ways and means of aligning the industry behind a program which may merit licensing by President Roosevelt under the proposed Industry Recovery bill.

Handicapped by uncertainty as to the exact provisions of the Industry Recovery bill, which is still pending in Congress, the association could do little more than arrive at a meeting of minds and a singleness of purpose.

A committee was appointed, however, to draw up an equitable schedule of prices for the washing machine industry—which, of course, will be the kernel of the agreement under the provisions in the Industry Recovery bill.

On this committee are J. C. Nelson

(Concluded on Page 4, Column 4)

## Patterson to Manage Mayflower Promotion

DAYTON—H. C. Patterson has been appointed to head the sales planning and sales extension divisions of Trupar Mfg. Co.

For the past five years, Mr. Patterson has been connected with Delco Appliance Corp. in a sales executive capacity.

# BY GEORGE F. TAUBENECK - - -

## *Seen at 'A Century Of Progress'*

Attendance at Chicago's 1933 World's fair during its first weeks has been somewhat disappointing. It has been good—ranging from 50,000 to 150,000 per day; but the optimistic fair promoters had expected more.

Biggest months will probably be July and August, according to the prognostications of exhibitors.

Heat has been terrific. New all-time highs for June have been recorded by Chicago thermometers.

The collegiate track men who pull jinrickshaws and push board-walk buggies have had plenty of business, and so have the streamlined Greyhound-General Motors busses. Walking in the heat is almost suicidal.

Among refrigeration and electrical men the most popular "sports" have been the Pabst Blue Ribbon Casino and the "Streets of Paris." The concessions, rides, sideshows, and other truck get little play from men of the industry.

Many of them agree that the 3.2 beer served at the Pabst Casino is the "real thing" at last (this is not a paid adv.—although we could use a complimentary case of that beverage); and, of course, terrifically hot days are bonanzas for brewers.

Ben Bernie, "Buddy" Rogers, Tom Gerun and their orchestras alternate at the Casino, which is indeed the "top" in entertainment. Mrs. Ford Carter's daily style shows there are also an attraction.

The "Streets of Paris" purport to be genuine reproductions of Parisian night life. Two very American entertainers there who are undoubtedly worth seeing are the divers, Jane Fauntz and Wally Colbath.

Jane, who was Olympic champion in 1928, and took third place last summer at the Los Angeles Olympics, is—like her former teammates, Eleanor Holm and Georgia Coleman—a very pretty girl. Colbath is a former Big Ten champion, and does a remarkable two-and-three quarters into the small pool.

Sinclair's exhibit of dinosaurs (the replicas of these prehistoric reptilians move and glare quite naturally) is also popular with representatives of the electrical business.

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On the night of Sunday, June 4, a sudden and fierce windstorm worked considerable havoc with many of the exhibits. In the General Motors building, for instance, windows were shattered.

Kelvinator's exhibit, which is in the forefront of the ground floor of the Electrical building, was jammed with an unexpected flood of visitors, all seeking shelter. The wind whipped into the exhibit, however, and sent rugs kiting. It had to be rebuilt Monday morning.

Screams of distress from patrons marooned atop the tall towers of the "Sky Ride" aided in making the storm a dramatic moment.

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Walked into the General Electric exhibit in the Electrical building Tuesday afternoon and found P. B. Zimmerman, manager of the specialty appliance department, surveying the handiwork of his cohorts.

"I thought you'd be the first person I'd see here," he grinned.

Walter Daily, manager of the sales promotion department, tarried but a short time at the fair, pulling out for New York Tuesday evening.

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Among the Plymouth Road contingent to be found at the Kelvinator exhibit last week were "Jud" Sayre, sales manager, Vance Woodcox, advertising manager, and Johnny Garceau of the sales promotion department.

Johnny was among those present at the cyclonic catasrophe Sunday night, and had some wild rides on the tag ends of catapulting rugs.

Mr. Sayre was working on prospects every time we saw him. Evidently he believes that the business of a sales manager is to sell.

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Ran into George Brown, manager of the Electric Refrigeration Bureau, "Ernie" Greenwood of the Edison Electric Institute, and C. L. Edgar of the Boston Edison Co., on the Island boardwalk.

Mr. Edgar has been one of the leading promoters of electric refrigeration among utility men, and is considered one of the mainstays of the bureau.

Talked with DUANE WANAMAKER, advertising and sales promotion manager of the Grunow Corp., but learned little more than you read in the last issue of ELECTRIC REFRIGERATION NEWS about the proposed merger of the Grunow Corp. and U. S. Radio & Television.

It seems that they can't go ahead with further plans until stockholders approve the transaction. When that happens we'll undoubtedly have more to tell you about this deal.

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JOHN DITZELL, general sales manager and assistant vice president of Majestic, told us that the Majestic plants are opening at 4 o'clock in the morning and not closing until 10 o'clock at night. They are also running Sundays.

Both radios and refrigerators are being turned out by the Majestic factories on the northwest side of Chicago. One reason for the extension of the radio manufacturing season into the summer is the new Majestic auto radio, which is leaving the Dickens Ave. plant in CARLOAD LOTS (you can get a helluva lot of auto radios in a freight car).

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## *Futuristic Homes*

Readers who may have been interested in our recent series of articles on Homes of the Future will be amazed and enthralled by the collection of model houses which line a "block" of one of the streets at Chicago's A Century of Progress exposition.

We shan't attempt to describe them in great detail here. Principles utilized in their construction were discussed in the series of articles mentioned above (ELECTRIC REFRIGERATION NEWS for May 10, 17, 24, and 31). Pictures will appear later.

One of the most novel is employing the Grunow advertising adjective, "Super-Safe." It has been put up by the Brick Manufacturers' Association, and they aver that not one combustible material was used in building it. They say it is:

"A house that fire cannot consume, that tornadoes cannot blow away, that earthquakes cannot demolish."

Also they will inform you that it is the first application of reinforced brick masonry in house construction from basement to roof. For $5,000, more or less (depending upon labor costs in various localities) you could have one built for yourself. Plans for this and similar houses are available at prices ranging from $10 to $25 a set.

This particular house has a height greater than its diameter, and seems something like a circular staircase. There's a porch on each of its three levels. Like all the other houses there, its roof is flat and is furnished with chairs for sunning and star-gazing.

A Servel Hermetic refrigerator, a Hotpoint electric range, and an Ilg-Kold air-conditioning unit are included in its equipment.

Not to be outdone by the brick manufacturers, the Lumbermen's Association has a very neat house on the grounds. Its interior, with its beautiful wood paneling, is a joy to behold. A Gibson electric refrigerator and a Holland air-conditioning furnace are prominently displayed therein.

Another $5,000 home there on the fair grounds is the frameless steel house sponsored jointly by the Ferro Enamel Corp. and the American Rolling Mill Co., and put up by the Insulated Steel Construction Co.

It has seven rooms, two baths, a sun-deck, and a garage. Lois Palmer of the *Ladies' Home Journal* staff, decorated it, assisted by the Kroehler Mfg. Co. As you might suspect, Kroehler fold-away beds are omnipresent.

A Westinghouse all-electric kitchen is a feature of this house. So is a boys' room finished like the inside of a steamship cabin. Surface Combustion Co. of Toledo furnished the heating and air-conditioning equipment, Celotex and Thermax the insulation, and General Porcelain Enameling & Mfg. Co. the lightweight kitchen sink.

Furniture is not particularly "modern." Sheraton, Chippendale, and Hepplewhite may be found there. Bows in the direction of modernity are made, however, with such practical adaptations as sliding shelves, swinging drawers, and folding mirror tops for chest and vanity tables.

Walls of this frameless steel house are only four inches thick, although they have six layers. They are something like the walls of electric refrigerator cabinets. No piece of steel used in the house is thicker than a dime. The various layers consist of porcelain-enameled siding, air space, insulation, metal wall, more insulation, and plaster.

Other houses of this type, they will inform you, may be put up for as little as $3,500. One such is being erected in Cincinnati right now. Erection is simple and swift, with just the following operations:

The metal door and window frames are welded in place and the floor and wall sections are ready to be hauled to the site like stage scenery.

Arriving at the site, the wide floor sections are laid in place on the foundation and each unit fastened to the other, producing a solid base on which to work.

Then the outside wall sections are laid in numbered sequence around the foundation and upended one after the other. These sections being full house high, the building is enclosed as if by magic, with strong, enduring steel.

At the ceiling line of the first and second stories a metal conduit is welded on which serves also as a continuous floor bracket.

The upper floor sections and roof are next lifted into place and securely fastened to the side walls.

Finally the glass and steel solarium on the roof is erected, and the metal chassis of the house is ready for the finishing work.

Insulation is fastened to the outside of the metal walls with a specially threaded nail which easily penetrates the metal and holds very securely.

Grooved strips of rustless iron are fastened to the outside wall, into which porcelain enameled panels are quickly inserted and locked in place.

There is no limitation of color selection. This house is decorated in two shades of coral, but any color may be selected.

A layer of insulation is applied on the interior side of the wall exactly as the insulation was applied to the exterior. Over this go two coats of plaster.

The ceiling is finished with acoustical tile. The finished floor is hardwood laid over a sound deadening felt in all rooms except the bath and garage, where a flexible terrazzo is used.

*Good Housekeeping* magazine and the Stran-Steel Corp. of Detroit are jointly sponsoring a very attractive house in this group.

Stran-Steel replaces two-by-fours and wooden beams in the construction of this house. By its use an ordinary steel nail may be driven into the Stran-Steel stud. It will follow the groove in the stud and clinch itself in place. Later it may be withdrawn without injury to the stud, which is especially valuable in the erection of temporary structures such as those at the fair.

It is claimed for Stran-Steel steel frame construction that: (1) it can be built by any carpenter from the usual set of plans for any style house; (2) that it is fire-proof and vermin-proof; (3) that they will not settle, crack, warp, sag, or be damaged by earthquakes and tornadoes; hence that they will have greater resale value; (4) that they will require no major repairs for the first 25 years of their existence.

A Kelvinator graces the kitchen of this house.

General Houses, Inc., has a dandy house out there (see previous issues of the NEWS), equipped with General Electric appliances.

Other model homes which we liked were Architect John Moore's "Design for Living" (perhaps the coziest of the lot), the W. & J. Sloane house, the Florida tropical home, and that put up by Rostone, Inc.

The Owens-Illinois glass house (at which, we trust, no stones will be thrown) is not yet completed.

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## *Lester (Ananias) Larkin & Whoppers*

For explanation of this picture, see "Tall Tales Dept." in column 5.

## *Tall Tales Dept.*

LESTER LARKIN likes to go fishing. Not only does he enjoy catching them, he enjoys telling about them.

Friends of Mr. Larkin have marveled increasingly at the whoppers he claims to have caught—some even suspecting they are whoppers he tells.

Final results of this suspicion was a "Liar's License for Fisherman," issued to Mr. Larkin by Grand Muskellunge O. G. LONSKEY, Copeland purchasing agent, countersigned by Exalted Fish Herder EDWARD BARGER, who is in charge of production at Copeland.

Text of the license follows:

"The BEARER, Lester U. Larkin, having, by reputation and long practice, coupled with a vivid imagination, exhibited all of the proper requirements therefor, is hereby empowered to Lie, Prevaricate, and show every other recklessness with the Truth, considered expedient by him, in connection with all matters relative to Fish and Fishing, for the current Season, subject however to the Regulations on the back hereof.

"IN WITNESS HEREOF is attached the Grand Seal of Ananias, Prince of Liars."

A contented-looking red fish, over the caption, "I lie cheerfully," constitutes the seal.

Regulations, as indicated, are found on the reverse side.

"1. Lies may be told at any place or time without notice. (Note: Not advisable to Game Wardens.)

"2. Cameras may be used, weighing scales doctored, and elastic rulers employed.

"3. Borrowed or rented fish may be used at all times.

"4. Guides or others may be bribed or otherwise induced to corroborate all good lies.

"5. No lies may be retracted, but may be added to, at will.

"6. An extra 'quarter pound' or 'half inch' will improve all lies.

"7. This license is null and void if used for any other purpose, including: (a) Weight of babies, (b) Tire and gasoline mileage, (c) golf scores, (d) prohibition matters, (e) all private or business purposes."

As we understand it from Mr. Lonskey, a sense of modesty would not allow Mr. Larkin to accept this tribute to his skill. The Grand Muskellunge then sent the license to us, with the pious hope that we might use our influence in getting the shy Mr. Larkin to accept it; and if he still refused, that we would inform the industry of his prowess.

Came the next day, and with it a counteractive in the form of a photograph showing Mr. Larkin with C. P. LEE, laboratory engineer, R. F. SHAW, chief engineer, and J. GUY WILLIAMS, secretary-treasurer (all of the Larkin Refrigeration Corp.), gracefully disposed on a dock in front of a remarkable one-day catch of 68 fish, weighing a total of 363 lbs.

The picture was taken, according to Mr. Larkin, on a recent fishing trip to Florida. Biggest fish was a grooper, weight 18 lbs., the smallest a kingfish, weight 2½ lbs.

Our calm acceptance of the generally accepted belief that Mr. Larkin is a prevaricator of the first water was somewhat shaken when we saw this picture. But, remembering that the license gave him permission to use rented fish in his nefarious pursuits, we had a return of confidence.

And when Mr. Larkin, in his comfortable suite at Henry Pichler's Statler hotel in Detroit, told us the one about the negro boy and Henry, we were convinced.

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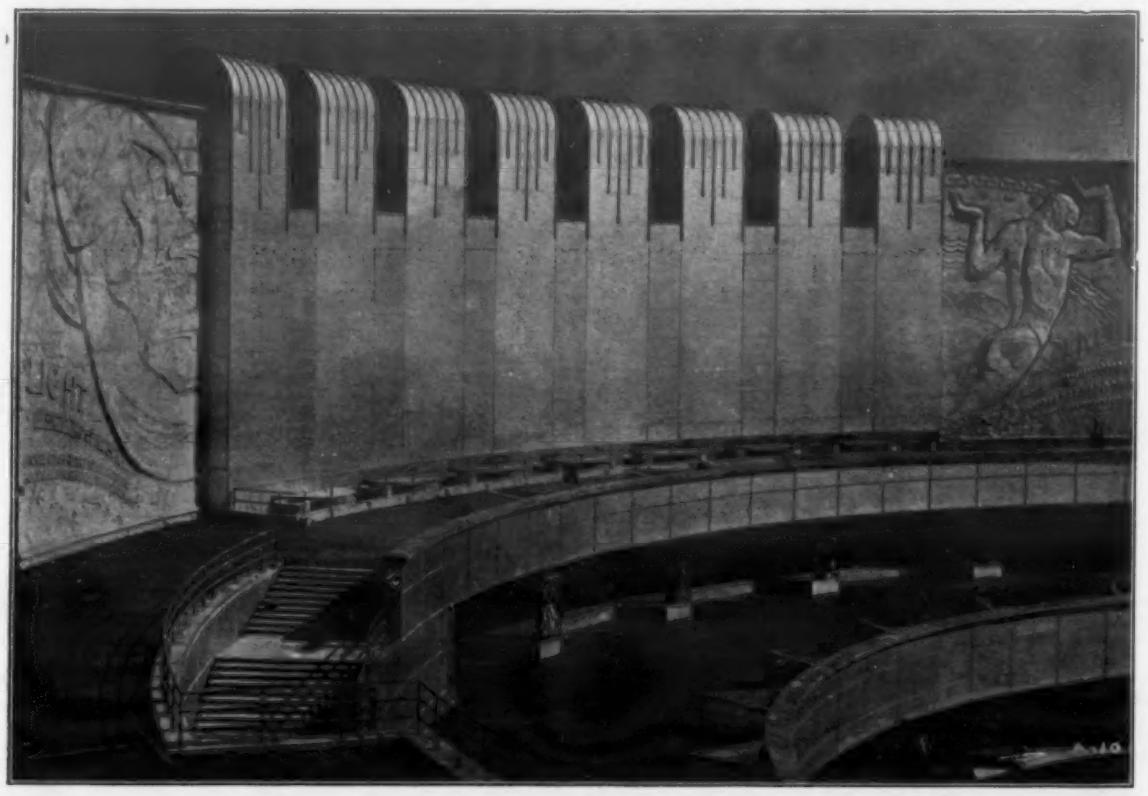
It seems that down in Wakaulla Springs, Florida, there is a negro who occasionally goes fishing with visitors. On these trips, he takes pride in showing the others the exploits of Henry, an astute fish who lives in a clear pool, 40 ft. deep.

When the black boy calls gently, "Come, Henry," the fish swims out from his hole in the bank, up and over a sumberged log, and back into his hide-away.

The log, declares Mr. Larkin, has been work smooth by Henry's many rubbings. With which we rest our case.

## *Where Big Refrigeration Exhibits are Housed*



The Electrical Bldg. at A Century of Progress, where several electric refrigeration manufacturers are exhibiting.

# FIRST SHOWING

*The greatest refrigerator value of the year!*

*a new model!*
*a new price!*

**$199.**
PLUS TAX AND DELIVERY

# GENERAL ELECTRIC

GENERAL ELECTRIC gives the retailer new sales opportunities with a refrigerator value that is unprecedented—a new model that is winning overwhelming public favor.

This new General Electric has greater storage capacity and more features than any G-E refrigerator ever offered at anywhere near the price. 7 cu. ft. capacity, over 12 sq. ft. of shelf area! All-steel cabinet with porcelain interior, stainless-steel freezing chamber, sliding shelves, new G-E defrosting control, automatic interior lighting, foot pedal door opener—and the famous Monitor Top sealed-in-steel mechanism that is guaranteed 4 years!

General Electric leadership—won through quality and value—has been maintained year after year through constant improvement of the product at steadily lowered costs. In April this year G-E sales reached a trainload a day! This was increased in May—and now June is doubling the record of May!

Public preference for G-E refrigerators means quicker turn-over and greater profits for the G-E retailer—and these profits are *continuous,* because every purchaser of a G-E refrigerator is a preferred prospect for the sale of a General Electric Range, a G-E Dishwasher—and eventually a complete General Electric Kitchen.

There is a General Electric Merchandising Plan for every size and type of refrigerator retailer—from the small one-unit outlet operated as part of another business, to the large specialty organization dealing in carloads—and each is a profit-paying plan for the retailer. General Electric Co., Specialty Appliance Sales Dept., Section DF61, Nela Park, Cleveland, Ohio.

# COMPANION MERCHANDISE

## WESTINGHOUSE WILL BUILD COFFEE MAKER

EAST PITTSBURGH, Pa.—A new electric vacuum-type coffee maker, priced at $4.95, has recently been introduced by Westinghouse Electric & Mfg. Co.

This new coffee maker has a capacity of 7 cups, and is made of heat-proof glass, mounted on a chrome-plated base. The heating element is constructed from refractory brick, with a capacity of 600 watts. The refractory brick base allows the coffee to be kept warm after it is brewed without the application of more heat, as the bricks retain the heat longer than the usual type unit. A wood handle that remains cool during the entire coffee making operation is also a feature of this new appliance.

To make coffee in this appliance it is only necessary to fill one compartment with water, to put the required amount of coffee in the upper receptacle, and to turn on the current.

As soon as the heat raises the water to the top compartment, the appliance is removed from the base and the water is drawn through the coffee into the lower compartment by the vacuum caused by the cooling of the lower container.

As soon as all the coffee has reached the lower container the upper receptacle is removed and the coffee is ready for serving.

## *Sparton Designs 6-Tube Radio For Autos*

JACKSON, Mich.—Sparks-Withington Co. has just announced a new all-electric automobile radio set designed to retail at $59.50. It is named model 33 and involves a 6-tube superheterodyne circuit.

The chassis is an entirely self-contained unit requiring no B-batteries and no external eliminator or connecting wires are needed. Included in the set are a matched antenna input circuit, a stage of tuned radio-frequency amplification, a combination first detector-oscillator, a band-pass filter intermediate frequency stage, a duplex diode-triode full-wave detector, automatic volume control and first audio amplifier stage, a super-power pentode output stage and an electric-dynamic speaker.

A remote control unit for mounting on the steering column is provided.

## STEVENS HEADS SALES OF COLUMBIA PHONOGRAPH

CHICAGO—E. F. Stevens, Jr., has been appointed general sales manager of the Columbia Phonograph Co., subsidiary of Grigsby-Grunow Co., according to John F. Ditzell, president of the Columbia Phonograph Co.

## *Kelvinator's Oil Burner*

Operating feature of Kelvinator's new oil burner is variation of the flame by a non-electric, hydrostatic control which operates like a thermometer.

## BOOKLET FEATURES BURNER

CEDAR RAPIDS, Iowa—A 16-page booklet in colors, featuring the new model 1-F oil burner manufactured by the Century Engineering Corp. of this city, has recently been released to the field. The booklet has been given the title, "A New Kind of Freedom."

## 3 NEW RADIO MODELS ARE ANNOUNCED BY MAJESTIC

CHICAGO—Two new table model Majestic radios and a consolette model have recently been announced by Grigsby-Grunow Co.

The Queen Anne consolette is an authentic period cabinet employing a 7-tube superheterodyne. It lists at $46.50.

The master six is a table model of unusual conventional design. The other table model, known as the Century six, has an advanced modernistic design with side panel of lacewood, bottom and side rails of black walnut, grille embellished with chromium design.

The same chassis is employed in both models. It is a 6-tube superheterodyne, providing delayed automatic volume control, full-range tone control, full-pentode amplification, and full-dynamic speaker.

## WASHING MACHINE FIRMS PLAN INDUSTRY PROGRAM

*(Concluded from Page 1, Column 5)*

of the Syracuse Washing Machine Corp., Marshall Scott of Barlow & Sellig, and C. G. Frantz of the Apex Electrical Mfg. Co. Edward Hurley, president of the association, will probably serve as chairman *pro tem* of the committee.

Practically every manufacturer in the washing machine industry was represented at the meeting. The association, which claims that its membership is 85 per cent of the industry, reported 100 per cent attendance; while the half dozen manufacturers outside the association sent men to the conference.

The same group will reconvene within two weeks in Chicago.

According to J. R. Bohnen, executive secretary, the association has reinstated an agreement with the directors of the laundryowners National Association concerning principles of business conduct which was cancelled a few months ago.

## *Universal Equipment Is Shown to Florists*

PROVIDENCE, R. I.—L. F. Pease Co., Universal Cooler commercial and Gibson household dealer here, had the only commercial refrigeration exhibit at the Rhode Island florist show which was held in the Auditorium here recently.

A Universal Cooler ½-hp. condensing unit operating a McCray florist box, full of flowers, formed the main part of the exhibit.

The Pease Co. also took the opportunity afforded by the exhibit to demonstrate the testing apparatus which they use to test all household jobs before they are sent out.

## NEW YORK GROCER SELLS LEONARDS

CASTLETON, N. Y.—Sancomb's, a grocery concern here which also serves as Leonard dealer, is killing two birds with one stone.

Using the Leonard 4-page letterhead as a mailing piece, the dealer lists grocery specials on pages one and four, letting the center Leonard spread speak for itself.

## WAYNE ATTEMPTS TO SIMPLIFY SERVICING

FT. WAYNE, Ind.—Having simplified the problem of "engineering" oil burner sales and installations with the introduction of a burner unit that will handle any sized heating job up to 30 rooms, Wayne Oil Burner Corp. is now working on a plan to simplify servicing of oil burners to the point where the owner will be able to do most of the servicing himself, according to J. A. Berghoff, sales manager.

The new model S-4, which will handle a 5-room cottage or a 30-room mansion, was designed with the thought of making the service problem as simple as possible. The filter screen can be removed for cleaning without the least difficulty, and adjustment of the oil or air flow can be done by any man, woman, or child.

A special service manual for the user may be completed before the end of the year, Mr. Berghoff states.

These developments, the Wayne sales manager points out, are being made to make the oil burner more of a "packaged article" than it has been in the past. It is his hope that sales through dealers in electrical appliances will thus be facilitated.

## 765 RANGES ARE SOLD BY ASSOCIATED SYSTEM

NEW YORK CITY—The "Spring Ensemble" campaign on ranges and automatic ranges conducted throughout the Associated Gas & Electric system closed April 29 with a total of 765 electric ranges and 192 water heaters sold.

Officials of the Associated Gas & Electric system estimate that the campaign will result in an additional $75,000 annual revenue from the power lines.

Central New York won first place in the electric division with 92 ranges and 70 water heaters sold. East Penn-New Jersey won second place in the electric division with sales of 328 ranges and 48 water heaters followed by Southern New York with 197 ranges and 28 water heaters.

## 131 KELVINATOR COOKING SCHOOLS ATTRACT 14,358

DETROIT—In addition to giving home demonstrations, presiding over Home Makers' clubs, calling on new dealers, and holding department store demonstrations, 15 Kelvinator distributors' home economists have conducted 131 cooking schools during May which were attended by 14,358 persons.

Prospects carded at these schools, amounting to 2,242, resulted in 104 immediate sales.

Largest number of schools were held by Norma Niehoff of the Buffalo branch, and Mabel Kirkland of Stratton & Terstegge Co., Louisville distributor. Each conducted 17 schools during the month.

Mrs. H. Chaney of C. R. Rogers Co., Pittsburgh, receives credit for the largest audiences. She spoke to 5,576 at the 10 schools she held, and was responsible for the most immediate sales—37. Largest number of good prospects was also reported from her schools, a total of 1,021.

Angela Allen of Raymond Rosen Co., Philadelphia, spent much of her time overseeing Home Makers' clubs, where she contacted 1,400 persons. Although only 625 others heard her story at schools, 23 immediate sales and 203 good prospects were turned in as a result of her efforts in this direction.

## *Appliance Show Opens In Dayton*

DAYTON—A Gas and Electric Appliance show, exhibiting latest models of refrigerators, radios, electric washers, ironers, gas and electric ranges, gas furnaces, electric sweepers, water heaters, waffle irons, and food mixers, opened here June 12 on the second floor of the Dayton Power and Light office building.

An all-electric kitchen is included in the exhibit, in which local dealers are cooperating.

The 16 firms exhibiting are Cappel Furniture Co., Burns Radio Co., Dexter Sales Co., Frigidaire Sales Corp., Hollister-Electric, Inc., May & Co., Rice Sales and Service Co., Wayne Furniture Co., Dayton-Kelvinator Co., Elder & Johnson Co., G. E. L. Electric Co., the Home Store, H. W. Pryor, Rike-Kumler Co., Wurlitzer's, and Booth Furniture Co.

## ELECTROMASTER BUILDS WATER HEATER

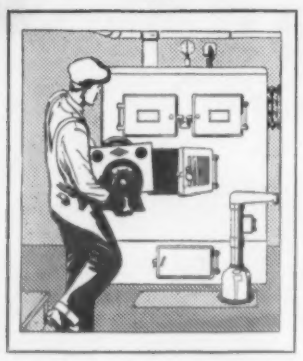
DETROIT—Electromaster, Inc., of this city, manufacturer of Electrochef ranges, has just announced a new electric water heater.

The tank is of galvanized steel, and is equipped with a thermostat. It is available in 30-, 50-, 66-, and 80-gal. sizes.


*Slam the Door on Competition with* KELVINATOR'S

SPLIT-DEGREE FLAME

OIL KELVINATOR BURNER



Here is an oil burner you can sell as easily to home renters as to owners. It can be moved from house to house like any other electric appliance.

Grates are not removed; no hearth is built in—a factor simplifying installation. Furnace or boiler continues to serve as an incinerator.

YOU know, as all heating engineers know, that the points of difference between burners of the intermittent type are differences in design—not fundamental differences in the type and quality of the heating service rendered the customer.

Competition among old-line oil burner dealers thus becomes a battle of words—an effort to beat the other fellow to the sale by demonstrating some slight shade of superiority of design, rather than of service to the user.

Why attempt to sell a burner which is practically the same—at least from the standpoint of the service rendered to the user—as the burners sold by your competitors?

**No Other Like It**

*Here* is a burner that is revolutionary in principle. It isn't just "a little better" in one respect and "just as good" in another. The Kelvinator Oil Burner is different. It has so many advantages—and they are so clear-cut, so easily described, demonstrated and understood by your customers—that they literally shut out competition.

The Kelvinator Oil Burner is scientifically designed for the millions of solid-fuel heating plants already in use. It is delivered and installed as a unit—swung through the furnace door and started—without interrupting heating service even in zero weather. This extends your selling season.

Chief among Kelvinator features is the Split-Degree Flame—a flame that burns constantly when any heat is needed—varying up or down with temperature requirements. A temperature change of 1/6 of one degree changes the oil flow. Constant, even heat! Warm air in constant circulation! No "cold 70°!"

**No Electrical Controls**

Hundreds of parts have been eliminated in the design of the Kelvinator Oil Burner. It has all the safety and operating controls that other burners have. They are positive, dependable, fully automatic—but non-electrical.

Territories are now open for those who wish to take advantage of this new profit opportunity. Write or wire the factory for details.

(110)

KELVINATOR CORPORATION • DETROIT

OIL BURNER DIVISION

# There are Many Reasons Why
# IT PAYS TO BE A
# MAJESTIC DEALER

*HERE'S ANOTHER! WATCH FOR IT!*

THE SATURDAY EVENING POST
June 17, 1933
BUILT TO SEE YOUR BABY
Majestic COLD DOME
SEALED IN 1933 TO RUN TILL '55 —AND LONGER!
Imagine machinery so perfect that it can be sealed for life! Not merely covered or concealed—but fused in walls of solid steel. Buried alive in oil!
That describes the Majestic Electro-Sealed Cold Dome—the heart of Majestic Refrigeration. Inside, hermetically sealed, are the motor and rotary compressor, running in a bath of oil that never has to be renewed. No dirt, no dampness, no abuse, can reach this vital mechanism. It is forever safeguarded against costly "trouble."
AN EXTRAORDINARY GUARANTEE
Now you see why the Majestic Electro-Sealed
THE SATURDAY EVENING POST
GRADUATE FROM COLLEGE
Make haste slowly . . . buying that electric refrigerator! It's just as easy to get one that will last for years—and be big enough to grow up with a growing family. . . . Take your time. Find a refrigerator that is engineered and built with the sole thought of delivering life-long, trouble-free *refrigeration*. . . . Do you know the Majestic, with its Electro-Sealed Cold Dome? It will pay you to look into it—to study it very carefully.
Unconditionally Guaranteed 3 Years
You don't have to understand machinery to realize what this Cold Dome means to you in terms of economical, enjoyable, uninterrupted service from your refrigerator. The Majestic's vital mechanism is sealed in oil, for life! That is not the case with most refrigerators. Very few makers positively and permanently protect their refrigerators' vital mechanism as Majestic does in the Electro-Sealed Cold Dome, with its outright, unconditional 3-year guarantee. *Compare* guarantees!
Yet You Save $35 to $75
Majestic offers you a *further* economy—prices $35 to $75 less than other hermetically sealed refrigerators, and no more than conventional exposed-mechanism refrigerators. You can get a *big* Majestic for what you would pay for many *under*-sized refrigerators! See the Majestic dealer if you want your money to do its very best for you!
Look for Majestic's Cold Dome. It means REFRIGERATION—not just a refrigerator
MAJESTIC...STANDARD OF EXCELLENCE AND VALUE IN REFRIGERATION; HOME, AUTO, AND PORTABLE RADIO; RADIO TUBES
COLD DOME Majestic
ELECTRO-SEALED REFRIGERATION

The Majestic dealer, with the support of arresting advertising like this, is in an enviable position. He can talk *refrigeration* while his competitors often have to "change the subject," and discuss controversial "features." Majestic COLD DOME Refrigeration is a *service* in which prospects have a natural interest.

Majestic dealers have a tremendous advantage in the *unconditional* 3-year guaranty on the Electro-Sealed COLD DOME. And they can provide *ample* food space—instead of undersized boxes of overstated capacity.

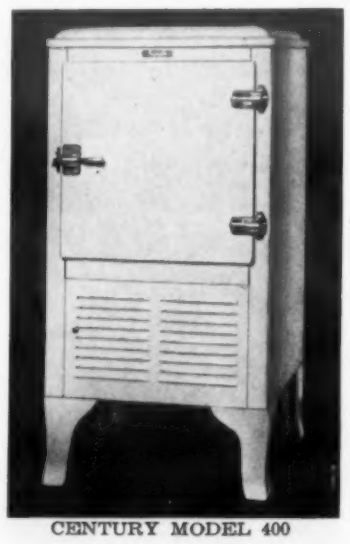
In addition—and very important, these days—Majestic dealers can offer greater dollar values—prices averaging $35 to $75 less than other hermetically-sealed refrigerators of equal capacity.

Majestic dealers are "getting the business"—*now!* You'd better ask the Majestic distributor whether he hasn't a proposition for you!

**GRIGSBY-GRUNOW COMPANY, Chicago,** and affiliates, with factories at Chicago; Toronto; Bridgeport; Oakland; London, England; and Sao Paulo, Brazil

## Majestic
## ELECTRO-SEALED REFRIGERATION

## A DOMINATING VALUE
## $89.50* . . . FOR THIS MAJESTIC



CENTURY MODEL 400

A Majestic—a fine refrigerator—to sell for $89.50. Just what you need for the small family of limited means. Food storage space, 8.5 sq. ft.: 2 ice trays: 42 ice cubes. Majestic rotary compressor, very efficient and economical in operation. Elasto exterior. Stainless porcelain interior.

** f. o. b. factory. Federal Tax Paid.*

# Cooperation as Sales Promotion Tool Urged by Refrigeration Bureau Head

(*Continued from Page 1, Column 5*)

trade association but will provide scope for such further endeavors as from time to time may be found of advantage and profit to member companies."

Mr. Cortelyou then outlined the chief functions of the institute which, summarized, are as follows: To provide a medium for exchange of information and experience data among members; to formulate engineering standards, technical procedures, etc., making for the promotion of uniformity where it is advantageous; and to represent the electric utility industry in joint relations with other national industrial bodies.

The institute, its president said, now has a membership, based on production of electric energy, of 75 per cent of the electric light and power companies in the United States.

Remarking that domestic electric rates are now 35 per cent below their pre-war level, and that the average family pays only seven cents per day for its electric current, Mr. Cortelyou said, "We are told that rates have not come down in proportion to the fall in commodity prices since 1929."

His answer was this: "They have not come down because they never went up. Rates which are limited to yield only a small fixed return in good times obviously allow no great margin for reduction in bad times, if the industry is to remain solvent.

"Yet domestic rates have shown a steady decline since 1929, amounting in the aggregate to 11 per cent, or from 6.3 cents to 5.6 cents per kilowatt hour for the country as a whole. Many people would no doubt be surprised to learn that they are paying less for their electricity than they paid before the war."

It would be a strange confusion of ideas, he said, which would boost commodity prices to stimulate economic recovery, and simultaneously lower utility rates, when proper functioning of utilities is necessary to the success of any recovery program.

He asserted that taxation has borne with crushing force on utilities, and has reached a point where it is now a serious obstacle to further general rate reductions.

"Considered in relation to operating income," he said, "taxes of the electric light and power industry absorbed 27½ cents of each dollar of such operating income in 1932, compared with 24 cents in 1931, and 22½ cents in the banner business year of 1929.

"Of each dollar of gross revenue, taxes now amount to 12 cents, and this without giving effect to the host of additional taxes levied by state and federal authority in 1933. The plain truth is that taxes cannot longer continue their upward course without halting the downward course of rates."

Following Mr. Cortelyou's address, members heard the treasurer's report given by Edward Reynolds, Jr., of the Columbia Gas & Electric Corp. in New York City, who brought out the fact that the Edison Electric Institute's budget is but 46 per cent of the 1932 budget of N.E.L.A., exclusive of the budget allotments of its geographical divisions, and that the organization is operating well within its income.

After a short address by Alex Dow of the Detroit Edison Co., the first general topic of the convention was taken up, with Norman R. Gibson of the Buffalo, Niagara & Eastern Power Corp. speaking on trends in production costs and the various factors determining them.

Further discussion of this subject was led by P. M. Downing of San Francisco's Pacific Gas & Electric Co., H. W. Fuller of the Byllesby Engineering & Management Corp. in Chicago, and H. B. Gear of the Commonwealth Edison Co., Chicago.

Speakers on this subject agreed that the industry is taking rapid strides toward adoption of uniform standards in the manufacture and distribution of electric current, that these functions are being placed upon increasingly efficient bases, and that the consumer is certain to profit ultimately from this work.

In the final address of the first day's sessions, E. W. Lloyd of the Commonwealth Edison Co. discussed the electrical exhibit at A Century of Progress, and its significance to the light and power industry and the public at large.

First speaker at the second day's sessions was S. M. Dean of the Detroit Edison Co., who presented the results of a study on the frequency and duration of interuptions in electric service to each consumer as caused by power house breakdowns, line failures, lightning, employes' errors, and the consumer's own equipment.

Four other speakers then commented upon Mr. Dean's paper, and carried discussion of the subject further. They were H. W. Eales of the Byllesby Engineering & Management Corp.; W. H. Sammis of the Commonwealth & Southern Corp., who read a paper prepared by B. L. Huff of the same organization; Mark Eldridge of the Memphis Power & Light Co. who read a paper by A. E. Silver of New York's Electric Bond & Share Co.; and Merrill De Merit of the West Penn Electric Co. in Pittsburgh.

Following these men's presentations, President Cortelyou invited B. C. Cobb of the Commonwealth & Southern Corp., chairman of the institute board of trustees, to address the members present.

Confining his remarks to the work and plans of the institute, Mr. Cobb said, "The National Electric Light Association had not outlived its usefulness, but various situations made it advisable to form a society of a more technical, fact-finding nature—that is why the Edison Electric Institute was organized."

With "Developments and Trends in Power Stations" as his subject, F. S. Clark of the Stone & Webster Engineering Corp. in Boston read a paper dealing chiefly with the construction and operation of steam power generating plants.

The following men then discussed Mr. Clark's paper and gave other information on the same subject: W. S. Monroe of Sargent & Lundy, Chicago; E. W. Allen, General Electric Co.; Dr. S. M. Kintner, vice president of Westinghouse Electric & Mfg. Co.; A. R. Smith, General Electric Co.; and Paul Thompson, Detroit Edison Co.

With treatment of this technical topic completed, the institute turned its attention for the remainder of the day's session to the industry's efforts and progress in merchandising appliances and lighting.

Invite a C. I. T. Representative to sit down with you, together with your sales manager and your credit man. Let him describe C. I. T.'s Refrigerator Financing Service . . . its setup designed to relieve you of credit burden and work so that the sales you make on instalment terms will yield as much net profit—everything considered—as cash sales.

Have him explain how this complete C. I. T. Service is offered through our Office in your territory. There you find trained finance men to check credits, buy paper, make collections and attend to every detail of your term business, quickly and efficiently.

Compare the low costs he quotes, made possible by our great volume of business. And make a special note that as a guarantee of our dependability you have the fact of our great capital strength plus a unique past record.

C. I. T. Plans cover approved types of mechanical refrigerators and water coolers, as well as electric ranges and air conditioning equipment. Phone today the nearest C. I. T. office.

THESE C. I. T. LOCAL OFFICES WILL WELCOME YOUR INQUIRY

Akron – Albany – Altoona – Amarillo
Asheville – Atlanta – Augusta – Baltimore
Bay Shore – Beaumont – Beckley
Binghamton – Birmingham – Boston
Bridgeport – Bronx – Brooklyn – Buffalo
Camden – Charleston – Charlotte – Chicago
Cincinnati–Clarksburg–Cleveland–Columbia
Columbus – Dallas – Dayton – Denver
Des Moines – Detroit – El Paso – Erie – Fort Wayne – Fort Worth – Fresno – Glens Falls
Greensboro – Greenville – Hagerstown
Harrisburg–Hartford–Hempstead–Houston
Huntington – Indianapolis – Jacksonville
Jamaica – Jamestown – Jersey City – Johnson City – Kansas City – Knoxville – Lansing
Lexington–Lincoln–Little Rock–Los Angeles
Louisville – Manchester – Memphis – Miami
Milwaukee – Minneapolis – Montgomery
Montpelier–Mt. Vernon–Nashville–Newark
New Haven – New Orleans – New York
Norfolk–Oklahoma City–Omaha–Orlando
Paterson – Peoria – Perth Amboy
Philadelphia – Pittsburgh – Portland, Me.
Portland, Ore. – Poughkeepsie – Providence
Raleigh – Reading – Reno – Richmond
Roanoke – Rochester – Sacramento
St. George – St. Louis – Salt Lake City – San Antonio – San Diego – San Francisco
San Jose – Scranton – Seattle – Spokane
Springfield – Stockton – Syracuse – Tampa
Toledo – Tucson – Tulsa – Utica – Washington
Watertown – Wheeling – White Plains
Wichita – Wilkes-Barre – Youngstown.

C.I.T. CORPORATION
NEW YORK — CHICAGO — SAN FRANCISCO
Completely Functioning Local Finance Offices in the Principal Cities

*A Unit of* COMMERCIAL INVESTMENT TRUST CORPORATION — CAPITAL AND SURPLUS OVER $70,000,000


## DAVIDSON MAKES REPORT ON REFRIGERATION BUREAU

Electric refrigeration came in for a good share of the discussion during the first address on national cooperative promotional campaigns by J. E. Davidson, president of the Nebraska Power Co., and chairman of the Electric Refrigeration Bureau.

Mr. Davidson has directed four of the five major promotional campaigns conducted by the electrical industry during the past 10 years.

The speaker first outlined load-building results obtained by the Better Home Lighting contest in 1924-25, the industrial lighting campaigns of 1925-26, work of the National Food Preservation Council in 1928-29, then gave quite a detailed report of the accomplishments of the Electric Refrigeration Bureau.

After explaining that the bureau became operative in 1931 on a three-year program, and that funds for headquarters activities were supplied by leading manufacturers of electric refrigerators, Mr. Davidson listed the projects carried out by the organization.

"By the end of 1933," he said, "the manufacturers' subscriptions of more than $600,000 will have been spent for national advertising and administration purposes. More than $5,000 000 will have been invested in local promotion from funds contributed by central stations and local sales outlets.

"In 1931 the sales quota was set at 1 000,000 new electric refrigerators. Our records show that 960,000 were sold. In 1932, the quota was again set at 1,000,000 refrigerators, and we realized sales of 76 per cent.

"According to available data, 380,000 refrigerators were sold between Jan. 1 and May 31 of this year," continued Mr. Davidson. "When we take into account the slow start made this year due to the bank holiday and late spring, the 1933 sales give remarkable proof of the growing buying power and increasing confidence of the public."

### Successful Campaigns

Mr. Davidson merely made mention of the year-old Electric Cookery Council, and left detailed discussion of its activities to the next speaker.

After summarizing briefly the results achieved through work of these five promotional campaigns, Mr. Davidson said, "The success of a non-commercial campaign depends upon the objective being of uniqualified advantage to the public, upon its bearing some close relation to some commercial advantage, and upon the campaign being of brief duration.

"A well and completely planned and organized cooperative campaign with a direct commercial purpose can be carried on over a long period, and its chance for success is strengthened by a long, continued effort."

One of the bureau chairman's most notable assertions was this: "As competition in electrical merchandise has become more and more keen, we have turned toward *cooperation as a means of sales promotion.*

"It is about time that we all recognized that coordinated action is one of our great assets, perhaps our most effective means for moving electrical goods. Isn't this perhaps a great step forward in the economical *selling* of goods as was mass production in the *making* of goods?"

Mr. Davidson's closing statement was, "It is high time that we planned for cooperative sales promotion on a basis of permanent national and local organization; on a basis which will enlist the eager support of the entire electrical fraternity; on a basis that will bring new prosperity to our entire industry, and a greater electrical era to the American public."

When a NEWS reporter asked him at the close of the session whether he expected the Electric Refrigeration Bureau to be continued after this year, Mr. Davidson replied, "I think it will pass out of the picture at the close of 1933. There will be no more money left, you know."

## 'READY TO START WORK ON RANGES'—ARKWRIGHT

One of the liveliest addresses delivered during the entire convention was that given by Preston S. Arkwright, president of the Georgia Power Co., who, as chairman of the Electric Cookery Council, was called upon to tell of the progress that organization has made since its establishment a year ago.

After explaining the nature of the organization and the work it has done, Mr. Arkwright launched into the main part of his address—an A-1 presentation designed to sell members of the institute as thoroughly as he is himself sold on the salability and practicability of electric ranges.

"Since its organization a year ago," said Mr. Arkwright, "the Electric Cookery Council has not been idle, despite the fact that it has not effected a tremendous increase in range sales. It has organized 93 local councils, and has 48 more in the making.

"One of the biggest jobs we had to do was to persuade members of the light and power industry that electric cookery can be sold. Even some of the range *manufacturers* were only lukewarm on the point. We had to sell the sellers of electric ranges.

"Now they're getting hot, and the best report I can give on the progress of the council is that now we're ready to start to work."

Taking up the subject of range sales from the standpoint of load building, the Georgia utility president said this: "We've got to get below a 4-cents-per-kilowatthour rate if we're to stop criticism. We can't do it at the present average annual current consumption. So we've got to sell electric ranges, and here's why:

"Not many folks are going to buy electric water heaters until they have an electric range, because a range is the only thing that can sell them on the use of electricity for heating. And there won't be much home air conditioning sold until after we've sold those homes electric ranges, because no one is going to heat his whole house with coal and then spend money cooling it with electricity.

"Electric cookery ought to be easier to sell than electric refrigeration, yet the refrigerator people have done a bang-up job of selling their product. Housewives have never stood by an ice box, watching to see that the food doesn't spoil. But they do spend long hours each day standing by a hot stove."

One of the speaker's side comments was: "I'm not knocking electric refrigeration. It's too late to do that now, anyhow."

Central stations, he declared, must conduct the work in promoting range sales. The electric range industry's biggest problem at the present is that of increasing outlets for the product, and this can be done only through pioneer work on the part of the light and power industry, is his belief.

## LOAD-BUILDING POSSIBILITIES OF AIR CONDITIONING

First half of the Wednesday session was given over to discussion of load-building opportunities in the air-conditioning field. C. E. Michel of St. Louis' Union Electric Light & Power Co. was the first speaker, and commented upon the subject in general.

Said this man: "The year 1932 saw the arrival of standardized air-conditioning units, and with them the opportunity sought by utility sales departments. Until that time, air-conditioning installations were tailor-made for each particular job, and had to be handled by experienced engineers.

"Further development of the industry now depends more on sound promotion and salesmanship than on engineering. The rapid and substantial growth of the electric refrigerator business followed the introduction of standardized units, and will, in my opinion, be duplicated in the expansion of the air-conditioning business."

Mr. Michel opined that as soon as new residential construction is resumed in volume, this market will demand more and more of the attention of utility air-conditioning salesmen. He differed with the opinion of some air-conditioning sales executives that residential air conditioning lies a long way in the future.

"Our (the St. Louis utility) experience indicates that the development of this market is not far away. Out of 44 installations we made in 1932, 16 were in residences, and only two for industrial processes. The rest were for offices and commercial installations. These results were secured from a general promotional effort which did not lay special emphasis on residential business."

Following are Mr. Michel's remarks concerning his company's findings as to the load-building aspects of various types of air-conditioning installations:

"In St. Louis, experience has shown that a residential installation will be in operation for an average of 1,000 hours during the season. If only one room in a residence is cooled with a connected load of 1½ kilowatts, such an installation will use an additional 1,500 kilowatt hours during the summer months.

"One residence in St. Louis last year

(*Concluded on Page 7, Column 1*)

# Air Conditioning as Load Builder Is Discussed by Edison Institute

(*Concluded from Page 6, Column 5*)

installed equipment for cooling three rooms with a total connected load of three kilowatts. Contract has already been signed for an additional 1½-kilowatt unit, so that the total load in this particular residence will now be 4½ kilowatts and will use an additional 4,500 kilowatt hours during the summer months.

"A completely air-conditioned office building in St. Louis last year used refrigeration for 1,253 hours while operating on a five-day week. During that time, it used 171,990 kilowatt hours for refrigeration only, while the total usage for air-conditioning purposes, including fans and washers, was 270,989 kilowatt hours for the year.

"A grocery store found cooling and dehumidifying beneficial to its business and the annual consumption for this purpose was 15,500 kilowatt hours. The connected air-conditioning load is 15.75 kilowatts.

"A large theater with a connected load of 375 kilowatts has an annual consumption for year-'round air conditioning of 412,000 kilowatt hours. A restaurant with a connected load of 12.75 kilowatts uses 10,000 kilowatt hours annually.

"A large hotel has two of its restaurants cooled with a total connected load for this purpose of 68 kilowatts and an annual usage of 78,000 kilowatt hours.

"The connected air-conditioning load on our lines is 5,773 kilowatts, made up of 103 installations of which 14 are for industrial uses, seven for theaters, 14 in restaurants, 31 in offices and salesrooms, 8 in retail stores, 26 in residences, 1 in a broker's board room, one in a mortuary, and 1 in a completely air-conditioned office building."

R. H. Tillman of the Consolidated Gas, Electric Light & Power Co., Baltimore, spoke on industrial air-conditioning applications and said that in industrial establishments where air conditioning is not absolutely essential, there still remains a selling job to be done, but that sales resistance is being broken down considerably by the results produced by *commercial* installations.

He reminded the utility representatives that loads can be substantially increased in some instances by selling industrial concerns apparatus for certain functions of air conditioning not already provided by existing equipment.

Referring to Mr. Michel's statement that "further development of the air-conditioning industry depends more on sound promotion and salesmanship than on engineering," Mr. Tillman said that while this may be true to some extent in residential and commercial air conditioning, good engineering is still of great importance in selling and installing industrial systems.

Davis M. DeBard of the Stone & Webster Service Corp., New York City, spoke on residential and commercial applications of air conditioning, and like Mr. Tillman, took issue with Mr. Michel on his statement that promotion and salesmanship are now more important to air conditioning than engineering.

"The air-conditioning child still needs its mother, the engineer," he said. "Every public utility company should organize an air-conditioning promotional department composed entirely of sales engineers. This department should supply technical advice to salesmen and dealers of air conditioning in the city, and should act as trouble-shooter on equipment installed by any outlet in that community."

As for sales promotional activities, Mr. DeBard recommended that every utility immediately launch a program of cooperative selling among all dealers in its territory, and that it place at the service of all dealers a man or men adept at sales closing. He also stated that utility companies should take the lead in starting air-conditioning associations similar to the local electric refrigeration bureaus.

In the session's final address on air conditioning, W. H. Hodge of the Bylesby Engineering & Management Corp., Chicago, urged that the utilities be more aggressive in their promotion of air conditioning.

The fact that more power companies have not installed air conditioning in their own office buildings, appliance shops, etc., tells its own story of the reluctance to spend money on something on which the industry is not completely sold, he said.

He told the institute that the present air-conditioning load in Pittsburgh consists of 3,719 hp., with an estimated annual consumpion of 2,551,880 kilowatt hours, and an annual revenue of $38,727. The majority of these installations were made without the power company's doing anything to promote the sales.

Air conditioning's development will be "rather slow," the speaker said, "unless the power companies take leadership in the selling job—and the problem . . . is primarily that of selling. Whenever we are prepared to put our backs and our dollars into it, and organize major selling efforts, then there will be a real future in air-conditioning development," said Mr. Hodge in closing.

## PLANS OF PROMOTING BETTER LIGHTING IN HOMES

M. E. Skinner, Niagara Hudson Power Co., Buffalo, sounded the keynote of his address when he said, "We are, all of us, victims of our own enthusiasm in many things and I wonder if in recent years our enthusiasm for the appliance load has not dulled our interest in lighting."

"Ninety-one per cent of the homemakers proved to be live prospects," said Mr. Skinner. In the eight homes in which definite recommendations were not made, only in one instance was this due to lack of interest. In the remaining seven, economic conditions prevented the making of recommendations for additional lighting."

In the 77 homes where good prospects for more lighting were found, a total of 34,775 additional watts was suggested, averaging 451 watts per home. Sixty-two per cent of the additional watts recommended were in the living rooms of homes visited. Shortly after the survey had been completed, 80 per cent of the home owners installed additional lighting equipment.

That eyesight conservation is one of the most powerful sales appeals in the field of lighting was one of the speaker's statements, after which he added that the reaction of the housewives contacted in the survey was one of more than ordinary enthusiasm.

The next speaker, H. M. Sawyer of the American Gas and Electric Co. of New York, told how his company has promoted lighting sales in the commercial and industrial market with methods much the same as those used by Mr. Skinner's company in the residential field.

"Frequently," he said, "your representatives will not add a single watt to the lines—they may even decrease the customer's load and at the same time give him better illumination. Their most important function is to sell understanding and confidence to the customer and in this way improve your public relations."

In an address on residential and rural lighting applications, R. E. Fisher of the Pacific Gas and Electric Co., San Francisco, said that "residential lighting has for years been recognized as the industry's most dependable and least competitive source of revenue," then added that this is probably why the field has never been adequately developed.

In conclusion, Mr. Fisher pointed out that sales effort and educational work in the residential field must be consistent—that spasmodic sales effort accomplishes nothing. He also made reference to the difficulty of residential selling, as it is difficult to develop sales plans which will produce revenue commensurate with sales expense.

General comments on the subject of increasing the lighting load were made by Oliver Hogue of the Commonwealth Edison Co., Chicago.

Closing the third day's session was an address given by George E. Whitwell of the Philadelphia Electric Co. which was admittedly a "sales talk on selling."

In it, he pointed out the advantages—material and abstract—which accrue to the utility company making a constant drive for more and new business in the industrial, commercial, and residential fields.

"We must keep ourselves sold on the selling end of the utility business, for there are many utilizations of electricity that are all but crying out for planned industry selling programs," he said, and then went into detail as to methods which can be used by sales departments in each of the three market divisions.

On Wednesday afternoon, members of the institute met on the second floor of the Electric building at A Century of Progress for dedication of the Electrical Group. Speakers at these exercises were Mr. Cortelyou; Rufus Dawes, president of the exposition; and Chicago's Mayor Kelly.

## TAXATION AND RATE TRENDS VITAL PROBLEM

Rapt attention and loud applause marked the institute's session on Thursday, for it was then that several utility men addressed the convention on subjects of vital interest to the central station industry—taxation, rate trends, and investigation by the Federal Trade Commission.

W. C. Mullendore, executive vice president of the Southern California Edison Co., Ltd., Los Angeles, opened the session with an address in which he deplored the present and proposed extent of taxation on the public utilities of the country.

He declared that certain taxes, imposed or pending, aimed at creating widespread purchasing power, would defeat their objective by destroying much more widely diffused purchasing power than can be recreated by tax moneys so raised.

Citing as an example the proposed levy of a 3 per cent federal tax upon gross earnings of the electrical utilities, Mr. Mullendore said, "While the federal government might derive 25 millions of revenue, the destruction in value of savings invested in utility equipment would amount to several times 25 millions.

"The taxpayer would be deprived of many times the value which the tax collector received, and if the money so diverted into the public treasury is spent on a non-productive undertaking, the loss to the public is increased many fold."

The utility vice president then urged other utility executives to inform users and owners of electric utilities as to the possible effects on service and investments existing in such taxation.

"Taxes are reducing, and in many cases, actually stopping dividend and interest payments," Mr. Mullendore said. "As Mr. W. J. Hagenah recently pointed out before a committee of the United States Senate, the operating power companies of the United States are owned by 1,535,000 stockholders, 70,000 of whom are employes and 1,100,000 of whom are customers of the companies.

"Payments for the use of their money means a widespread diffusion of purchasing power. Conversely, a diversion into the coffers of government of the earnings which should have gone to pay these people for the use of their savings, means a widespread contraction of purchasing power. And inasmuch as values are dependent upon earning power, the disappearance of net earnings means widespread destruction of values."

Taking up the relationship between taxation and rate reduction, Mr. Mullendore asserted that "another glaring example of taxation destroying more wealth than is received by the public treasury is to be found in those taxes which prevent the reduction of rates to millions of users of public utility services.

"Lower rates encourage increased use and increased use means more production—a growth of goods available for exchange—which means a growth of purchasing power.

Mr. Mullendore assailed the levying of taxes upon existing industries to obtain capital with which to build governmentally operated and tax-exempt competitive enterprises.

"Closely allied with this is the negative use of the same power by failing to use it in the taxation of proprietary governmental enterprises which operate side by side with privately financed taxpaying enterprises," he declared.

"The differential in operating costs which the government thus creates for its own creatures destroys values, and threatens the existence of the sources of taxable wealth. On privately financed electric utilities in many states, the tax burden takes from 13 to 17 per cent of gross receipts."

When the speaker on rate trends, F. A. Newton of the Commonwealth & Southern Corp., New York, was introduced, he began his address with an answer to the charge that public utility rates are too complicated.

"Those who make this charge are merely trying to break down private ownership of public utilities," he asserted. "The fundamental characteristics of a business cannot be ignored in setting the price of its product.

"When a utility decides upon a certain rate, it must remember that the rate must yield a margin over actual cost, that it must not cause unjust discrimination, and that it must be able to get and hold business—it must be promotional."

"As taxes go up, and rates go down, there will be but one way for utilities to maintain a satisfactory income—they must make every effort to place more current-consuming appliances in the homes and stores of the country, and to increase the use of electricity by all industries," he concluded.

Further discussion of rate trends was offered by E. J. Fowler, statistician of the Commonwealth Edison Co., Chicago, whose address was next.

Final address of the convention was delivered by Bernard F. Weadock, vice president and managing director of the institute, who had as his subject the Federal Trade Commission's investigation of the electrical industry.

"The commission has entered its sixth year of investigation of our industry," he said, "and I believe the industry joins me in the hope that the investigation will not be terminated before the commission has had an opportunity to study the good the industry has done as well as the abuses.

"A great deal of attention has been called to the fact that the valuations of some companies were greatly increased during the period when, as a matter of fact, the valuation of everything was increasing," he stated.

"The fact is that the write-up shown is about 5 per cent. This compares with an increase, during the same period, of 104 per cent in the value of New York City real estate, 97 per cent in wages, and 1,186 per cent in the cost of federal government.

"During this period, while the write-ups were going on," he continued, "domestic electric rates were reduced 25 per cent. This should be proof that write-ups do not increase rates to consumers.

"To date, the effect of the Federal Trade Commission's investigation has been to emphasize the industry's bad points—many of which have been corrected since the investigation began—and to pass over the good points.

"In order that a thorough survey be made by the commission before it makes its report to Congress, it should be supplied with sufficient money and personnel to make so thorough a report that the latter will reflect the good as well as the bad about our industry.


The SHELVADOR

U. S. PATENT 1898922

LOOK

Model D-35
(Illustrated above)
3½ cubic feet NET capacity; 8 square feet of shelf space. (N. E. M. A. rating.) Has two ice trays, each tray with a capacity of 21 ice cubes—42 cubes in all. Additional space provided for an extra single tray or double depth tray. 3 inches of insulation at top, sides, bottom and door. Dimensions: 50⅝" high, 23⅞" wide, 24" deep.

Model D-45
(Not illustrated)
4½ cubic feet NET capacity; 10.6 square feet of shelf space. (N. E. M. A. rating.) Has three ice trays, each tray with a capacity of 21 cubes, 63 cubes in all. Additional space provided for an extra single tray or double depth tray. 3 inches of insulation at top, sides, bottom and door. Dimensions: 56⅛" high, 23⅞" wide, 24" deep... $99.50

Model D-60
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An Electric Refrigerator with Shelves in the door for eggs, butter, bacon, and other small articles

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An exclusive patented feature found only in the New

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Just open the door . . . and THERE it is! Here in a nutshell you have the newest and most important improvement in refrigerator cabinet design since the invention of the ice box. Now . . . no more reaching . . . no more searching for the little things that, in ordinary refrigerators, are so hard to find! No more disarranging of everything . . . no more sleeves dragged through butter . . . no more foods leaking through the shelves. Think of the time saved . . . think of the increased "usable" capacity of the New Crosley Electric Refrigerators with Shelvador. Shelvador actually gives the Crosley Electric Refrigerators greater capacity than their ratings indicate by increasing their "usable" capacity. Try to put everything that goes into Shelvador on the shelves of an ordinary refrigerator, and you'll be amazed. An orange takes as much "shelf room" in the ordinary refrigerator as a bottle of milk. In the Shelvador it takes only the space of an orange.

Only Crosley Electric Refrigerators can use the Shelvador, for it is an exclusive patented Crosley feature. For anyone to buy a refrigerator without Shelvador is to deny himself a great convenience and time saver as well as to buy something already outdated. When people see it they quickly realize that they ought to replace their present refrigerator.

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ALL PRICES INCLUDE DELIVERY..INSTALLATION..ONE YEAR FREE SERVICE

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# New Ideas in Homes

CENTER of interest to thousands of visitors to Chicago's 1933 world's fair, A Century of Progress, has been the street of model homes. Alone of all the groups of exhibits at the fair, these "homes of the future" have been so swamped with visitors that it has been necessary to add extra guides and attendants in order to accommodate the crowds of people who want more information about them.

Two features of these homes stand out above all others: (1) they are functional in design; and (2) they are air conditioned.

By "functional in design" the makers of these houses mean that they are fashioned to look the part they play in modern home life, and are made out of materials best adapted to quantity production and the needs of modern families.

Whether of porcelain-on-steel, reinforced brick, glass, or various forms of patented composition, these new houses are designed for *factory production,* for more *efficient operation,* and for *economical construction and maintenance.* Further details of this new trend in house designing may be found on page 2 of this issue, and in a series of articles published in ELECTRIC REFRIGERATION NEWS during the last four weeks in May.

That the modern home was not complete unless it was all-electric, and especially if it did not have an electrical kitchen, has been accepted by advanced designers for some time. True to this concept, all these homes have all-electric kitchens and are equipped with various other electrical appliances. But never before has it actually been brought home to the general public that *air conditioning is here,* and that any home built today without air conditioning will probably be obsolete before the builder gets his investment returned!

Air conditioning, at A Century of Progress exposition, is not just something that has been developed for theaters and certain kinds of factories and which would be a nice thing for the home some day; but is an accepted part of the modern house.

Hundreds of thousands of visitors will undoubtedly leave the fair with that idea firmly implanted in their minds.

What all this means to specialty selling organizations seems fairly clear. First of all, air conditioning gets a heavy push. Given good equipment to sell at a fair price, distributors and dealers should be able to cash in on the tremendous publicity accorded air conditioning by A Century of Progress.

Secondly, the new style in home building, which might almost be called "package merchandise," is eminently fitted to the promotional talents of specialty selling organizations. Tie-ups between refrigeration distributors and such concerns as General Houses, Inc., and Insulated Steel Construction Co., in the not-too-distant future may mean profits for both.

Members of the industry who visit A Century of Progress exposition should by all means examine the group of modernistic homes. Those with vision and imagination may get some ideas before their inspection is ended.

# Nema Collecting Data For Conference

*(Concluded from Page 1, Column 3)*

during the past two weeks, also the fact that the Administrator cannot be officially appointed and cannot announce his plans before the passage of the law, it appears fortunate that we have not become ensnarled in a futile attempt to crystallize industry opinion regarding this legislation. Furthermore, it is essential that proper preparation be made in advance of the meeting."

*Question*—"What preparation do you consider necessary?"

*Answer*—"We must recognize the enormous amount of detailed information which should be collected in view of the fact that the 'voluntary code' to be submitted to the government must include the following features:

(1) That the association admits equitably to membership all who are engaged in the same industry or trade.

(2) That the association is truly representative of the trade or industry for which it speaks.

(3) That the code will not promote a monopoly.

(4) That it will not oppress or discriminate against small enterprises.

(5) That employes shall have the right to organize and engage in collective bargaining with employers.

(6) That no employe will be required to join a company union or to refrain from joining a labor organization of his own choosing. This outlaws the so-called 'yellow dog' contract.

(7) That the employer will comply with the maximum hours of labor, minimum rates of pay and other working conditions, approved or prescribed by the President.

(8) That the code will tend to effectuate the policy of the act.

"Since the NEMA meeting at Hot Springs, Mr. Louis Ruthenburg and his staff have devoted their entire time to collecting information relative to the Recovery Bill from the many sources available. They have been following the activities of other trade associations with the idea of being in a position to present to the general meeting of the industry complete information on the entire situation."

*Question*—"Does that mean that NEMA will have a complete plan to present to the meeting?"

*Answer*—"No. It means that NEMA will have complete information as a basis for discussion, thus paving the way for intelligent and constructive action."

*Question*—"Don't you consider it advisable for the industry to proceed with all possible speed in formulating a program to take advantage of the benefits of the law?"

*Answer*—"Yes, so far as speed is consistent with the rapidly changing aspects of the proposed legislation and as rapidly as may be consistent with the great complications which have become apparent as we give the many phases of the act more than superficial examination."

*Question*—"Who is being consulted at present in regard to the plans and program?"

*Answer*—"In the message which you published in the May 24 issue, I asked for opinions and suggestions from all interested executives in the industry and requested that communications be addressed to Mr. Louis Ruthenburg, 2638 Book Tower, Detroit. While Mr. Ruthenburg has received several letters, we have been disappointed in the number who responded, particularly outside of NEMA, as we appreciate how necessary it is to have the assistance and cooperation of all companies concerned with this legislation."

*Question*—"Can you give a definite date on which the general meeting will be called?"

*Answer*—"It is impossible at this time to set a definite date and I can only say that the meeting will be called immediately upon completion of a proper agenda to submit to the meeting."

# LETTERS

## *Protection to Small Manufacturers*

Uniflow Mfg. Co.
Erie, Pa.
May 29, 1933.

Publisher:

Referring to your message in your issue of May 24 concerning the National Industry Recovery bill. We are inclined to be of the same opinion as Mr. Evans of Merchant & Evans, and several others, that a new association of the refrigeration industry should be formed, and that some outside party should serve as impartial coordinator.

If we sense the feeling of the small manufacturers correctly, it is that the large manufacturers already controlling Nema would make it tough on the smaller manufacturers and perhaps might technically comply with Paragraph 2, Section 3 on "Codes of Fair Competition" where it says: "that such code or codes are not designed to promote monopolies or to eliminate or oppress small enterprises and will not operate to discriminate against them," but actually proceed to eliminate small manufacturers. By control of wages, hours, and prices, the large manufacturers could eliminate the smaller ones, who manifestly cannot get as much for their products as the large one can with their prestige and advertising on such a scale that it is prohibitive for a smaller company, to say nothing of lower mass production costs of larger companies.

We are in sympathy with elimination of cut-throat competition indulged in in the last few years, not only by certain smaller manufacturers, initiated by those who more recently entered the field, but by larger ones as well.

We entered the refrigeration field in a small way in 1929 and have not cut loose with cut-throat prices below the market, but always found ourselves in the position of having to meet lower and lower prices.

C. A. KUEBLER,
President.

## *Evans Objects to Nema Control of Industry Association*

Merchant & Evans Co.
2035 Washington Ave., Philadelphia
June 8, 1933.

Publisher:

The eyes of the industry are concentrated upon the movement through Congress of the National Industrial Recovery act. It is semi-authoritatively stated in today's paper that the oil, motors, steel, and a few other great industries have already completed in outline a program of cooperation under a code. Apparently, the electric refrigeration industry will await the enactment of the law before undertaking consideration of operation thereunder.

It certainly behooves every manufacturer of electric refrigeration to study and consider ways and means of cooperation under the act, for the best interests of all concerned. In a letter dated May 9 I gave an outline of certain outstanding difficulties as I saw them in the conduct of the industry up to this time, and offered a skeleton program of possible remedies. This letter you were good enough to publish in your issue of May 17. I have felt, therefore, that I might properly add some points which have developed in the situation since:

1. On the fundamental proposition as to whether the industry should attempt to function under the wing of N.E.M.A. or whether it is advisable or in fact indispensable that an All-Industry Association be formed without affiliation with any alien group; on that point I may briefly say that it is my view that the N.E.M.A. as a vehicle suggests insuperable objections, or I might say "cumulatively insuperable objections" as follows:

(a) The utility influence in N.E.M.A. forms a gulf between the best interests of electric refrigeration and the utilities, because electric refrigeration wants to manufacture and sell at a reasonable profit, while the utilities are only interested in selling electric refrigeration for the load.

(b) The set-up and government of the N.E.M.A. is not and naturally cannot be entirely in the interests of electric refrigeration, as an association, in that or any other great industry should be. In other words N.E.M.A. is not and cannot be made to be a proper vehicle for serving the best interests of electric refrigeration.

2. On the other hand, I believe from my interpretation of the proposed legislation that only an All-Industry Association, free and independent of all others, will satisfy the requirements of the law. If the industry does not form one on proper representation I believe that the government will compel the formation of an electric refrigeration association and the adoption of a code for the industry. If the industry found it impossible to so accord with the government's purpose, then a code would be written by the government for the industry, and those operating under it would be licensed. There is every reason why electric refrigeration manufacturers should assemble and form an association, adopt a code and present it to the proper authority in Washington for approval, so as to get it into operation at the earliest practicable moment.

3. As to the basic principles to be included in this all-important code in addition to the points I enumerated in my letter of May 9 previously referred to, I believe that the code must first of all give equal rights and protection to every member of the association, with due regard for size, but without discrimination. It must be truly representative by including practically the entire industry, but on the other hand guaranteeing proper representation and treatment of small as well as large factors. In other words, there must be no monopoly, no discrimination because of size, and the same freedom of opportunity. The code must comply with provisions for minimum wages and maximum hours for labor. Further, the code must definitely point the way for cooperation in agreeing upon costs, standards, and merchandising methods to promote profitable operations, higher wages, and greater employment.

If and when we get together in Detroit, we should discuss to a finish all these various points and get going with as little delay as possible. I trust that if there is any delay in the final adoption of the proposed legislation, Chairman Johnston will call a meeting well before the first of July.

THOMAS EVANS,
President.

## *Association Should Include Suppliers*

Dry-Zero Corp.
Merchandise Mart, Chicago
May 29, 1933.

Publisher:

Regarding the proposed development of an association representing the electric refrigeration industry. I am rather inclined to agree with Mr. Thomas Evans that such an association should be specific to the industry rather than a division of a very much larger and infinitely diverse group. I think there should be no remote chance of any tendency toward, or even claim of, the possibility of domination of the industry's own association. Not that the NEMA would be likely ever to have any desire to exert domination, but I feel strongly that the only sound and wholesome situation for an industry of the size of electric refrigeration, would be to have its own completely representative organization.

That this organization should include the suppliers of the industry would seem to go without saying, as we have naturally had to bear our share of price pressures, and that in turn is liable to affect the workers in our factories and the other effects which it is the purpose of the "new deal" to control.

It seems to me that such an association would be better for all concerned than an association composed alone of complete electric refrigerators and separate associations for each group of supply manufacturers.

There is, of course, two sides to this question, and after thinking it over it seems to come back again to that one basic thing—the willingness to deal with and be guided by *facts.*

HARVEY B. LINDSAY,
President.

## *Assistance*

Herbert Evans & Co.
Importers
88 Pritchard St.
Von Brandis Sq., South
Johannesburg, South Africa

Editor:

We are regular subscribers to ELECTRIC REFRIGERATION NEWS and find it of considerable interest and assistance.

R. W. WHITE.

## *No Bank Failures*

"It's a pleasure to renew my subscription to a trade paper giving out such valuable news on such a timely subject as refrigeration! By the way—no bank failures here (3 banks)."—W. O. Howe, Niagara, Lockport & Ont. Power Co., Olean, N. Y.

## *Missed*

"Please renew my subscription to ELECTRIC REFRIGERATION NEWS and send me all back numbers since you stopped send it to me. I can't do without it and have missed the numbers that you failed to send."—Alex McKenzie, San Antonio, Tex.

## *Worn Out*

"I received your sample copy of ELECTRIC REFRIGERATION NEWS and have just about worn it out. I am sending the special coupon and $2.00 for your 41-issue offer. After reading your sample copy I would recommend ELECTRIC REFRIGERATION NEWS to all who are interested in this line of work."—Floyd R. Peters, Boonville, Mo.

# Suggestions for Collecting Data and Setting Up Fair Competition Code Under Recovery Bill

The following suggested preparations for Industrial Recovery act have been proposed by Ernst and Ernst, certified public accountants, New York City.

Those provisions of the proposed Industrial Recovery act which pertain to the regulation of industry may be summarized as extending an opportunity to each trade or industry to formulate a "Code of Fair Competition" which in the judgment of the majority will provide a sound workable basis of operation and prevent destructive competitive methods. They further provide that should an industry not formulate such a program the government may prepare one and impose same upon it. In either case the final code becomes enforceable upon all members and penalties are provided for violations thereof.

The desirability of a program voluntarily devised by an industry is obvious as against a compulsory governmental program. It further seems obvious that the formulation of a plan which would be equitable to an industry as a whole could only be achieved after complete facts as to the methods and practices of all members of the industry are assembled and consideration given to variations in these which may now exist.

It therefore seems clear that an industry need not necessarily wait for the final passage of the Industrial Recovery act and the release of interpretative regulations in order to begin the preparation of its own program, as the collection and tabulation of the present methods and practices of an industry can be begun before the final act with regulations are available.

The gathering of information regarding present practices of the industry should be so arranged as to provide information for two main purposes:

(1) To supply trade practice data which will be necessary in formulating the industry's "Code of Fair Competition."

(2) To furnish information that will be necessary in connection with the development of uniform accounting, minimum wage scales, working conditions, and other policies essential in establishing proper selling prices and the general operation of the industry's code when established.

Our suggestions for accomplishing the purposes above outlined are as follows:

(1) The appointment of a committee (as small in number as possible) which would truly represent all divisions or factions of the industry. Give them authority to proceed with the collection of all data required for the formulation of the industry's "Code of Fair Competition" and also to prepare such code for the subsequent adoption of the industry.

(2) This committee would have prepared a detailed questionnaire by which all members would provide information concerning their present methods and practices, data concerning the present costs of doing business, and any other information which the committee deems necessary to enable them to ultimately prepare a "Code of Fair Competition."

(3) It is generally considered that the proper maintenance of any "Code of Fair Competition" will require the adoption of many uniform policies by all members of an industry and the establishment of some uniform method of accounting. It would therefore be important to have the questionnaire set up so as to secure sufficient data so that a uniform method of accounting and procedure for establishing selling prices can be devised under the direction of the committee.

(4) To assure complete coverage of all phases of the business operations through the questionnaire, it is suggested that competent accounting counsel be engaged by the committee to assist in the preparation of the questionnaire. It is further suggested that when questionnaires are sent to members that the accounting counsel be requested to have one of their representatives call at each member's plant to review the answers which will be supplied to the questionnaire in order to assure uniformity in these answers and thus speed up the collection of necessary data.

(5) These questionnaires when answered can be filed either with your association secretary or your accounting counsel in a confidential way and the results tabulated *with names omitted* and the final summaries submitted to your committee. In this way confidential data submitted by a member would not be disclosed to the others, but general information as to the methods and results of all members will be available to the committee for the purposes heretofore outlined.

(6) With this information in the hands of the committee, it is then ready to function immediately in drafting their industry's "Code of Fair Competition" when and as sufficient information is available from the government through the final passage of the act and the release of regulations thereunder.

(7) Following the preparation of the industry's code or in conjunction therewith, your committee with the assistance of your accounting counsel can also draft a uniform accounting system which each member may adopt. This would be in the form of a uniform chart of accounts with instructions as to the methods for arriving at costs and selling prices. Individual members would handle their own installation of these methods with such outside assistance as they might require. In most instances the adoption of this uniform accounting method would not entail radical changes in their present accounting forms or methods of record-keeping as the uniform plan would be concerned only with the principles and classifications of accounts rather than with the detailed methods by which accounting data is compiled.

## *Cooperation*

**The National Industrial Recovery act provides the long awaited opportunity for each industry to cooperate to eliminate "cut-throat" competition. Ford, Bacon & Davis, Inc., has repeatedly pointed out in reports, in consultation, and in the press, the heretofore paralyzing legal restraints placed on producers and sellers.**

**The act is not paternalistic in the respect that the government is now about to "interfere" with business. In fact, it is the other way around, it lightens perhaps the most severe restriction that business has had—the Anti-Trust Laws. It removes a governmental ban against sensible planning.**

**It will mark an entirely new way of doing business and those interested should know how to go about it promptly and surely.—Page Golsan, vice president Ford, Bacon & Davis, Inc., Engineers.**

In approaching the problem of developing a "Code of Fair Competition" for an industry, there seems to be a multitude of difficult problems due to variations in the methods and practices now in vogue among the members. Many of these appear difficult of reconcilement or adjustment and they will doubtlessly remain so until comparative data is tabulated and a general view of the entire industry thus presented. The compilation of this data alone will clear up many of the problems and will place the committee in position to suggest plans for clearing up many others.

It must be borne in mind at all times that the initiative in solving an industry's problems rests in the first instance with the members of that industry and that they, better than any one else, should be able to provide the specific knowledge for the solution of their own problems. After this has been done it remains for the industry to secure government approval of the plan which, according to the present indicated intent of the proposed legislation will be forthcoming if the plan is in the public interest.

It therefore seems that an industry can at any time set in motion a procedure that will collect as promptly and as completely as possible all data necessary to have in hand for the industry's committee to go forward with the preparation of its code. Furthermore, it seems obvious that this procedure will be necessary regardless of the ultimate provisions of the act and the regulations to be issued under it, and regardless of the type or character of the code which the industry may desire to prepare.

Inasmuch as the collection and tabulation of data regarding present methods and practices of the industry seem necessary, it therefore appears to us that this work need not be deferred until the passage of the act and that it should be possible to go quite a distance in the preparation of the industry's "Code of Fair Competition" before the final act and regulations thereunder are available for the reason that the proposed legislation indicates that broad powers will be given to an industry to provide its own code and that the government's part in the program will be largely one of reviewing same in the interest of public policy.

It is our opinion that for your industry the preparation of the questionnaire and the final tabulation of all data secured through these questionnaires would take approximately three to four weeks to complete, depending of course upon the degree of cooperation extended to the committee by the members of the industry.

## CHAMBER OF COMMERCE OUTLINES PROCEDURE UNDER ACT

The following procedure of operating under the Industrial Recovery act has been proposed by the Chamber of Commerce of the United States:

In response to many inquiries, we offer the following suggestions as to procedure by trade and industrial associations under the Industrial Recovery act:

First and foremost, there is an emergency phase under the act which requires immediate action; that is, the immediate organization of industries into associations, the installation of small representative groups with power to act and including representation of dissenting minorities, if any, to the end that, upon final enactment, there may be immediate submission by trade or industrial associations of their Codes of Fair Competition.

It is recommended that, in view of the emergency and the importance of immediate action, agreements be sought first on the four principal aspects of the problem, namely, for each trade or industry:

Maximum hours per week.

Minimum wage rates per hour.

Price agreements, subject to the provisions of subdivision (a) of Section 3 "that such code or codes are not designed to promote monopolies or to eliminate or oppress small enterprises . . ."

Any suggested action against recalcitrants.

Careful note should be made of the compulsory features of the act, which must be embodied in all codes of fair competition, namely, the prohibition of inequitable restrictions on admission to membership in trade or industrial associations, the requirement that such membership be truly representative, and the rights of employes as provided in the bill as enacted.

As everyone knows who has participated in the trade practice conferences inaugurated by the Federal Trade Commission, there are numerous details and refinements in any carefully considered trade agreement. Many such agreements or codes are now in effect and in such cases the full code may and should be presented to the Administrator of the act for approval.

What it is desired to emphasize is that, for the present, agreements may be limited to the four points which cover the first phase, all other controversial matters to be passed over for further consideration rather than to permit them to interfere with the prompt operation of the act throughout industry.

A memorandum of subjects relating to trade practices ordinarily covered in such agreements is attached hereto.

### SUBJECTS RELATING TO TRADE PRACTICES

(*The following list is intended merely as suggestive of subjects for rules which, under appropriate circumstances, should receive consideration in the drafting of Codes of Fair Competition.*)

Sales below cost—

Agreements to prevent selling below cost must necessarily define the term "cost" and provide a definite method for determining such cost.

Regulation of credit—

Many involve agreement both on uniform credit terms and on control or restriction of credit.

Secret rebates—

Embraces special services as well as discounts, absorption of transportation costs, advertising allowances, free samples, etc.

Fraudulent and deceptive practices—

Includes false or misleading advertising, mislabeling and misbranding, false invoicing, use of slack-filled containers, use of inferior materials, etc.

Price cutting—

Adherence to published prices or to price agreement.

Delivery points—

Sales based on uniform delivery points.

Misappropriation of competitors' business—

Inducing breach of contracts, espionage, piracy of styles, enticement of employes, imitation of trade names, etc.

Price discrimination

Commercial bribery—

Gratuities to salesmen, inducing sales by payment of commissions or rewards to employes of distributors, lavish entertainment, etc.

Second-hand allowances

Guarantee against decline—

Also, protection against advance in price.

Premiums

Selling on consignment

Anti-dumping—

Sale of surplus products in markets outside normal sales territory below prices prevailing in such markets.

Repudiation of contracts

Uniform contracts—

Including terms and conditions of sale.

Compelling purchase of group of products—

As condition to the purchase of one or more products.

Defamation of competitor—

Also, disparagement of competitors' products.

Misleading guarantees

Standardization

Firm bidding

Sales without mutuality—

Contracts to be binding equally on both parties, regardless of price fluctuations.

Self-enforcement of rules—

Each industry might well consider the advisability of setting up special machinery within the trade association or otherwise for the purpose of supervising the conformance with the provisions of the trade rules and, in the first instance, of enforcing compliance with such provisions.


CONSTRUCTIVE COOPERATION

FRIGIDAIRE
GENERAL ELECTRIC
GIBSON
KELVINATOR
LEONARD
NORGE
SERVEL
UNIVERSAL
WESTINGHOUSE

Promoting Sales Cooperatively

Leading manufacturers of electric refrigerators, as listed above, are giving generous financial support to the Electric Refrigeration Bureau which for three years has been an important factor in promoting sales.

Through the national advertising, through its field men, through its 500 local Bureaus, each carrying on local sales promotion, the Electric Refrigeration Bureau is constantly enlarging the market for electric refrigerators.

Local Bureaus invite the cooperation of all electric refrigerator sales outlets. Regardless of the brand of electric refrigerators you handle—no matter whether you are an exclusive refrigerator dealer, a hardware, electrical, radio or furniture merchant, your interest and cooperation is desired if you sell electric refrigerators.

In supporting the Electric Refrigeration Bureau you are fostering a most economical means of increasing the market for your electric refrigerator—for all electric refrigerators.

INVEST IN AN ELECTRIC REFRIGERATOR

ELECTRIC REFRIGERATION BUREAU

420 Lexington Avenue,
New York City

# LOS ANGELES FIRM HANDLES COPELANDS

LOS ANGELES—Refrigeration Distributors, Inc., of this city has just completed arrangements with Copeland Products, Inc., of Mt. Clemens, Mich., whereby it obtained exclusive distribution of Copeland electric refrigeration in the southern California territory.

Refrigeration Distributors, Inc., has been established as a wholesaler of electric refrigerators for four years. J. Simon is president of the company, A. A. Carlson holds the office of vice president, and Stanley S. Simon is secretary-treasurer.

G. H. Nicholson is retail sales manager on household and apartment house sales, and Elwood Hoffmann is commercial sales manager.

The main office of the firm on West Seventh St. here has 120 ft. of show window frontage on the street. Show rooms of the two-story building are decorated in modernistic style.

In addition to its main store, Refrigeration Distributors, Inc., owns several leased departments in local department stores and maintains a branch in Pasadena.

## *37 Refrigerators Sold In Bankless Town*

WEST FRANKFORT, Ill.—Leading all Central Illinois Public Service Co. branches in refrigeration sales although every bank in the town is closed, the West Frankfort office has sold 37 electric refrigerators since January. Thirty-three of these were Kelvinators.

H. O. Channor, Jr., is group superintendent of the branch, while William L. Rice is salesman.

## *Sample Unit Closes Sales of 32 Leonards*

PECOS, Tex.—Canvassing with a sample Leonard refrigerator on the back of his truck, according to W. E. Brack, local dealer, was largely responsible for the 32 electric refrigerator sales he has made between Jan. 1 and May 1 of this year.

Pecos is a town of 700 to 800 people, surrounded by an arid region dotted with small producing oil wells.

During the 1932 season, Mr. Brack displayed only a few samples on his floor, and his policy was to handle the business that came to him rather than go out and look for it. This year, seeing the possibility of more sales, he did a right-about-face as to policy. He placed five models on his floor and started canvassing with his Leonard-laden truck.

Calling on oil drillers and ranchers within a 20-mile radius of Pecos, he was usually able to leave the sample Leonard on approval.

Mr. Brack this year has also run Leonard advertisements in his local newspaper, and has used factory direct mail material regularly.

## SOUTHERN WHOLESALERS REPORTS INCREASE

WASHINGTON, D. C.—Southern Wholesalers, Inc., Leonard distributor in the Washington and Baltimore areas, this week announced a 220 per cent increase in business for April, 1933, over the same month last year.

Officials of the company attributed the sales gains largely to consistent use of advertising. In March, 3,200 lines of Leonard advertising appeared in the Baltimore newspapers, and in April 5,640 lines. The territory was closely covered with billboards.

# TYROL TALKS TO 100 MICHIGAN DEALERS

DETROIT—Nearly 100 dealers trooped to the offices of the Michigan Majestic Co. here Friday night, June 9, to hear Jacques Tyrol, West Coast representative for the Grigsby-Grunow Co. now on a tour of the country, deliver an inspirational sales message. Mr. Tyrol was introduced by A. A. Trostler, local manager.

Highlight in Mr. Tyrol's speech was his plea that salesmen raise themselves out of the peddler class and live up to their reputations as "specialty" salesmen.

### Stand at Side of Door

"Don't walk up to a door with the air of an undertaker," the speaker exhorted. "Step up to the door with a smile, not a smirk, and when the lady of the house answers the door, be standing to one side, so she will have to open the door wide.

"What are you going to say when she opens the door? Are you going to ask her in a feeble tone if she is interested in refrigeration. Or are you going to engage her interest by telling her that you would like to come in for a minute and talk about food preservation?

"Most housewives are more than glad to talk to a nice appearing, decent talking man who has something of interest to say. If a salesman can tune his thoughts to the prospect's and interest her in the subject, without mentioning that he is going to sell her something, he can lay a foundation for some real selling effort."

## GROSSI AWARDED WATCH IN S. AMERICAN CONTEST

BUENOS AIRES, Argentina—Jose M. Grossi, sales manager of the Compania General de Electricidad de Cordoba, Cordoba, Argentine, was recently awarded a gold wrist watch for making the highest percentage of quota during the recent three months General Electric refrigerator campaign conducted by the properties of the Compania de Electricidad del Sud Argentino (subsidiary of the American and Foreign Power Co. in the Argentine).

This company serves about 120 towns in the Argentine, and Mr. Grossi was competing against six other company sales managers. The watch was presented by the General Electric Appliances, S.A., of Buenos Aires.

According to W. H. Taylor, vice president and general manager of General Electric Appliances, S.A., a greater number of General Electric refrigerators were sold in the Argentine during 1932 than for the previous year, and at a higher unit value.

## FIVE NEWCOMERS HANG UP RECORD AT N. Y. BRANCH

NEW YORK CITY — Five new Frigidaire salesmen in this area have rolled up excellent sales records in the short time they have been with the New York branch, according to Douglas R. Lawrence, manager of the sales planning division for Con M. Eakin.

George Guild, operating in Jamaica, sold three household models his first three days out. W. Lowe, another new man in the same community, sold three units his first week.

Nine sales in his first three weeks as an electric refrigeration salesman were chalked up by J. C. Cook, from the 125th St. store in Manhattan, while H. E. Davis, Tarrytown and Irvington-on-Hudson, signed five prospects his first 10 days.

L. V. Hale, Westchester county, closed 16 sales his first month as a salesman.

Lawrence stated that the salesmen attended the usual school conducted for new Frigidaire men and then were sent into the field.

## *Higbee Buyer Visits Trupar Factory*

DAYTON—To discuss Mayflower sales activities in Cleveland, Robert Johns, appliance and home furnishings buyer for Higbee Co. there, visited the Trupar Mfg. Co. factory a short time ago.

Mr. Johns' department has already exceeded its first six months' 1933 quota on electric refrigerators.

## 34 KELVINATORS SOLD IN DUTCH INDIES

CURACAO, Dutch West Indies—S. F. Jonkhout, Jr., new Kelvinator distributor here, has sold 34 Kelvinators in the first four months of 1933 on this island of 210 square miles.

Mr. Jonkhout replaced Frank Da Costa, formerly in charge of wholesaling Kelvinator refrigeration here.

## *Entries in Window Display Contest Close July 1*

CLEVELAND—Entries to the window display contest being staged by the refrigeration department of General Electric Co. must be received at the offices of the company at Nela Park here not later than July 1, officials of the company have announced. Entries will be made through a photograph of the window.

The contest is open to every retailer selling General Electric refrigerators. The window must feature a General Electric Monitor Top refrigerator. The display must be actually installed in a display window and in use for at least one week during May or June. A cash prize of $25 will go to the winner.

Window display material offered by the refrigeration department of G. E. may be used, but it is not compulsory.

In judging the entries, emphasis will be placed on sales appeal, attractiveness, and originality. Best use of space, rather than extent of display, will govern the award-making.

## HAMBURG BROS. DEALERS GUESTS AT SALES PARTY

PITTSBURGH — A "millionaires' party" was an added feature of the spring dealer meeting held here recently at Hotel Fort Pitt by Hamburg Brothers, Majestic distributor. Over 700 dealers were present.

Address of welcome was given by President E. A. Hamburg of the distributorship. Professor F. H. Stiening and Harold Kay, sales manager of Hamburg Brothers, then spoke on Majestic refrigeration and sales plans.

Speakers from the factory included Harry Alter, assistant general manager of Grigsby-Grunow Co., and Jacques Tyrol.

At the jamboree following the meeting, visiting dealers indulged in gambling with stage money, and Pittsburgh's 3.2 brew.

# BASSETT SELLS 57 TO ARMY OFFICERS

NEWPORT NEWS, Va.—Richard Bassett of the Virginia Public Service Co. here, champion individual Kelvinator salesman in the 1932 Kelvinator Derby contest and renowned for his feat of selling 111 models to army officers at Ft. Monroe and Langley Field, has recently added to his laurels by selling another carload (57 models) to more army men stationed at these posts.

Bassett's latest achievement is enhanced by the fact that of the 57 models sold, 45 were in the deluxe line.

The "using the user" formula has been Bassett's chief selling weapon in his sales victories at the army posts.

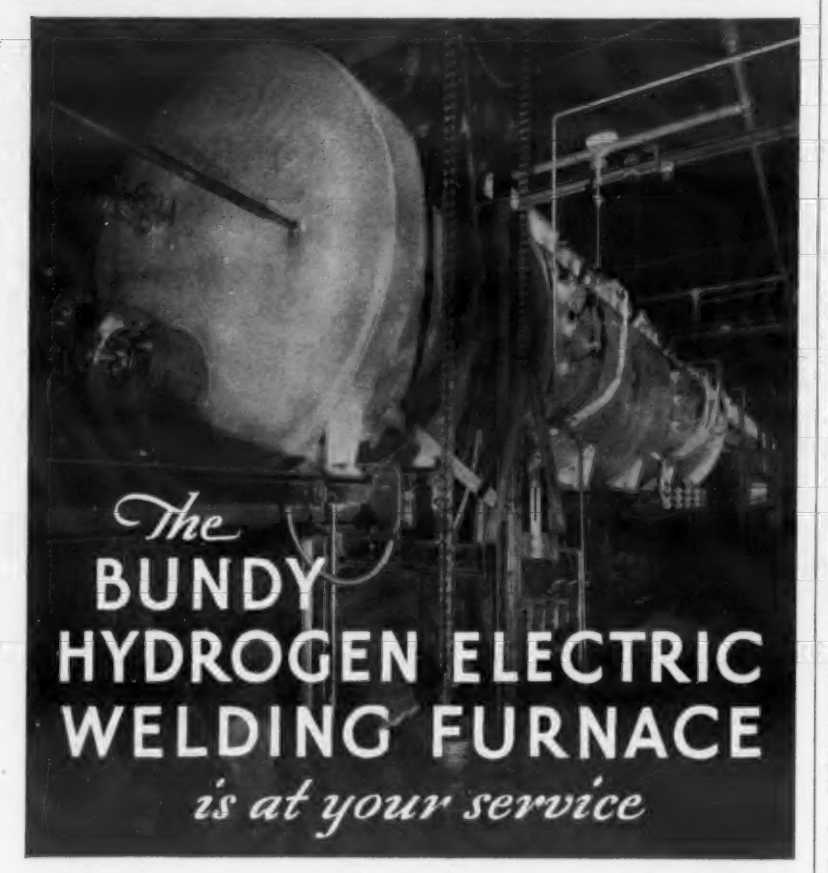
"When several officers volunteered their recommendations regarding satisfactory results they had received from their Kelvinators I thought it would be worth while to see just what we could do by using these men as 'satisfied users' to help us sell more Kelvinators," Mr. Bassett declares.

"The commanding officer gave us the right to contact all parties at the post interested in the purchase of electric refrigerators. He also followed this up by posting a notice in the daily bulletin at the fort. I then canvassed as many of the officers as possible who had purchased last year and had them supply me with names of interested persons.

"At my suggestion these officers began canvassing their friends and the result was enough names within two days to make up the required amount for a carload shipment.

"It was interesting to note that when they heard of the extra advantages of deluxe models, the question of the few extra dollars a month was never raised.

"At Langley Field, 100 planes with officers and men were absent due to maneuvers on the Pacific Coast. The only thing I could do was talk with their wives, and also interview the engineers and technical men. I didn't realize how much I knew about Kelvinators until those engineers got through questioning me."


REPLACE expensive forgings and castings with simple inexpensive parts; produce assemblies more complicated than you had ever considered possible; insure scale-free cleanliness of welded parts both inside and out; produce gas-tight joints with no apparent application of metal!

These are the things that the use of the Bundy Hydrogen-Welding Furnace makes available to you. The process may be applied to any product made of iron or steel. Parts may be furnished to Bundy machined for a snug fit; or Bundy will furnish complete welded assembly to your specifications.

Send us your blue prints and specifications for quotations.

BUNDY
TUBING COMPANY
4815 Bellevue Ave. Detroit, Mich.

NEWS!
REFRIGERATION TUBES
in lengths up to 200 ft.

For the first time in the industry's history, Seamless Copper Refrigeration Tubes as large as one-half inch in diameter are available in lengths up to two hundred feet. Smaller tubes can be had in even longer lengths. For instance, the one-quarter inch tube illustrated is 425′ long.

A newly developed process has made possible these long lengths, which materially reduce the risk of failure by minimizing splices. The longer lengths also reduce scrap losses, as the exact amount required can be cut without waste at the ends.

French De Luxe Copper Refrigeration Tubes are free from oxide and foreign matter. Each coil is *completely* dehydrated, sealed, rigidly tested and reaches you ready for use. For manufacturers who prefer to do their own dehydrating, the French Manufacturing Company produces copper tubes dried (*commercially* dehydrated), with either open or closed ends.

All French Copper Refrigeration Tubes possess the requisite properties for lasting, dependable service. Their grain structure is uniform. This important quality is in every coil because highest metallurgical skill, long manufacturing experience and only the best of raw material go into their production. Additional information will be furnished upon request.

THE FRENCH MANUFACTURING CO.
*General Offices:* Waterbury, Connecticut

FRENCH REFRIGERATION TUBES

# AIR CONDITIONING

## FIRST INSTALLATION OF THEATER COOLING MADE BY FRIGIDAIRE

CHICAGO—The first theater air-conditioning installation to be made by Frigidaire Corp. went into service this past week at A Century of Progress when the G. M. Little Theater was opened to the public.

The Little Theater seats 300 persons and is complete in every respect. Educational, entertaining, and other types of sound motion pictures are shown 13 hours a day.

The air-conditioning installation is unique in that the three first 10-ton air-conditioning compressors to be built by Frigidaire in Dayton were used. In addition other compressors are used to provide a maximum of 34 tons of refrigeration.

The air-conditioning system is of the duct type with entrance and return ducts. Entrance ducts are located along the two side walls. The return ducts are above the lighting fixtures. The refrigeration coils are located in the ducts without the theater, itself. Provision for draining of excess moisture was made by the placing of drain pans beneath each coil.

The system was designed to provide comfortable indoor conditions despite outside conditions, according to J. C. Chambers, manager of Frigidaire's air-conditioning division, and Fred Kinch, engineer who laid out the system.

Any one of the compressors, any combination, or all may be in operation to meet the cooling and dehumidification requirements of the day. All are thermostatically controlled.

The conditioned air is introduced through 12 grilles. New air is introduced to keep the indoor atmosphere fresh and invigorating at all times.

In addition to the theater, the large foyer and two dressing rooms are air conditioned. Combination duct and unit system is used in these rooms with the units recessed in the walls away from the traveled area.

*Frigidaire Theater Cooling*

General Motors' Little Theater at A Century of Progress is cooled by 34 tons of Frigidaire equipment. Here are two of the 10-ton compressors used. Above is a view of inlet and outlet grilles in the auditorium.

## COMPARES REVERSED REFRIGERATION WITH PUMPING OF WATER

EAST PITTSBURGH, Pa.—A reversed refrigerating plant can be more easily understood if it is considered as a machine which pumps heat just as a water pump pumps water, according to J. M. Labberton, Westinghouse air-conditioning engineer, who is working with an experimental installation in an East Pittsburgh house.

In this analogy British thermal units of heat or B.t.u., correspond to gallons of water. Degrees Fahrenheit of temperature difference correspond to feet difference in the two water levels.

"Reversed refrigeration merely pumps heat into a space to raise the temperature in the space, as contrasted to straight refrigeration which pumps heat out of a space to cool it," he states.

Since the energy used to pump either heat or water can also be expressed in B.t.u., confusion sometimes occurs due to the impression that the efficiency is over 100 per cent—better than perpetual motion, Mr. Labberton points out.

**Pumps Heat from Outdoors**

"Such is not the case in reversed refrigeration. No heat is made. Energy is merely used to pump existing heat from the low outdoor level to the relatively high indoor level. In so doing, the outdoors is made a trifle cooler, just as a lake is lowered slightly by pumping some water out of it," he explains.

The terms "out-of-doors" and "indoors" were used above because the house has been heated at East Pittsburgh this past winter by means of reversed refrigeration.

Calculations indicated that with a temperature of 70° F. indoors and 0° F. outdoors, 100,000 B.t.u. per hour would leak out. If the outside temperature were higher, the leakage of heat would be less in proportion.

**Water Analogy**

Similarly, if water were being kept at a certain level in a tank and there was a leak in the bottom of the tank, the water would leak out at a certain rate. If this tank was also surrounded by water and the level of this surrounding water was above the bottom of the tank, that is, the difference in levels, inside and out, less, than the leakage rate would be lower.

For instance, if the outside temperature were 25° F. and the inside 70° F. the difference would be 45° F. instead of 70° F., as formerly, and only 45/70 times as much heat would leak out, or 65,000 B.t.u. per hour instead of 100,000, according to Mr. Labberton.

**Experimental Installation**

A small heat pump, designed to care for no more drastic condition than the latter (25° F. outside), was installed in the house at East Pittsburgh. Automatic control was installed with a thermostat so the outfit required no attention from the occupants.

Recording thermometer records show that the temperature was maintained at 70° F., with no perceptible variation as long as the outside temperature did not go below 25° F. When the outside temperature dropped to this value, the compressor started to run continuously, whereas, at higher temperatures, it ran intermittently.

"One of the principal difficulties contemplated was the frosting of the evaporator," Mr. Labberton states. "This was encountered at first when the outside temperature was between 25° F. and 35° F. accompanied by rain or snow, but, after some changes on the evaporator this difficulty was overcome. It would frost somewhat under the above conditions, but a slight change in weather conditions following would clear it up."

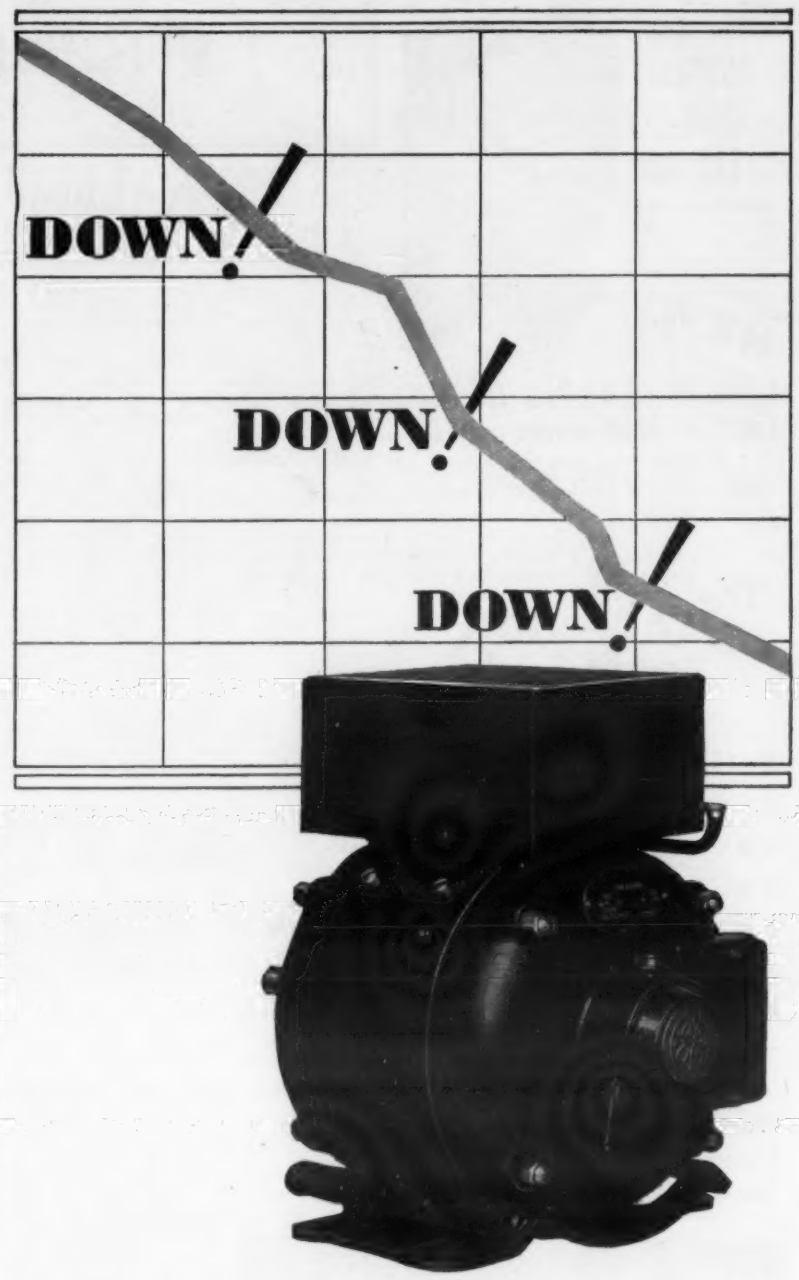
## RESTAURANT IN DETROIT COOLED BY WELL WATER

DETROIT—An air-cooling system using deep well water has just been installed by the Vanderbush Co., local sheet metal contractor, in the Oasis restaurant, a dine-and-dance establishment on Plymouth road at the outskirts of Detroit.

To obtain cold water for the system a deep well was sunk underneath the building. This 50° water is pumped through finned coils in the basement, cooling and dehumidifying the air drawn over it by two centrifugal fans which discharge the cooled air through two grilles into the restaurant above.

A temperature as low as 75° F. can be held in the room by utilizing the full capacity of the pumping system (40 gals. of water per minute), the installer claims.

In the basement is a third fan which introduces fresh air to the system, and maintains a positive air pressure in the restaurant, so that air is discharged through windows and doors, and through the kitchen.

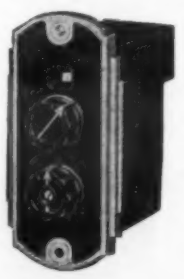

go your service problems

WITH the Type KC **"care-free"** capacitor-motor in your 1933-model refrigerator, the graph of your service complaints approaches zero. The enviable reputation of this motor is attested by the many manufacturers who have adopted it.

The **"care-free"** motor, because of extreme simplicity of design, is unusually dependable. Its long life is the result of minimized points of wear.

Specify the Type KC capacitor-motor for your 1933 model. Motor specialists in the nearest G-E office will be glad to tell you more about the **"care-free"** motor, or address General Electric, Schenectady, N. Y.

DEPENDABLE CONTROL



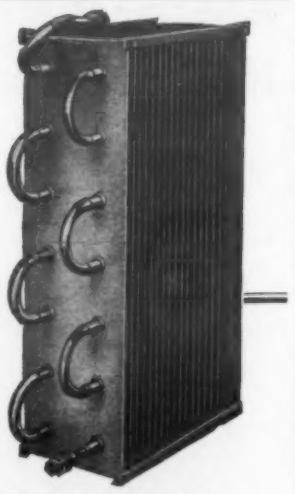
General Electric offers undivided responsibility for the electric equipment of your refrigerator—the *right* motor for the job and the *right* control for the motor, together with wire and cable, and other dependable electrical accessories.

210-152

GENERAL ELECTRIC

For Cases not equipped for overhead Refrigeration

*Now Over 40,000 Larkin Coils in Daily Use*



THIS COIL made for All-Service Display Cases or Combination Storage and Display Cases comes in many sizes and principally used in cases not equipped for overhead refrigeration.

But one of 124 Standard Models and Sizes in LARKIN *original* 100% Vertical Surface Aluminum Plate COILS stocked for quick delivery at Atlanta, Brooklyn and Chicago. Special sizes from Atlanta only.

LARKIN
Refrigerating Corporation

STANDARD FACTORY EQUIPMENT WITH
COPELAND : SERVEL : WILLIAMS ICE-O-MATIC : MAYFLOWER : UNIVERSAL : KULAIR : ZEROZONE : M & E : MODERN : STARR : MOHAWK : DICELER : LIBERTY : H. M. Robins Co., *Export and Others.*

*Originator and Manufacturers*
ATLANTA, GA., U. S. A.

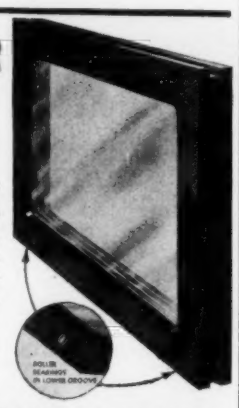
WAREHOUSES
Brooklyn - Chicago

U.S. PATENT No. 1774238.

100% VERTICAL SURFACE
LARKIN COILS

SEND FOR PRICES AND CATALOGUE

The accompanying cut illustrates the roller bearing construction in detail.



NEW!

ROLLER BEARING DOORS

AMERICAN HARD RUBBER COMPANY

11 Mercer Street, New York, N. Y.

Akron, Ohio • 111 W. Washington St., Chicago, Ill.

The Matheson Co

East Rutherford, N.J.

Will ship
any quantity of
any refrigerant to
any one
any where in
any cylinder at
any time by
any route.
also
Refrigerator Oils
Carbolube (water white)
Sulfolube (topaz)

# ENGINEERING

## RYKENBOER AT HEAD OF R. & H. CHEMICALS

WILMINGTON, Del.—Dr. E. A. Rykenboer has been appointed general manager of the R. & H. Chemicals Department of E. I. du Pont de Nemours & Co. to succeed C. K. Davis, who was recently elected president and general manager of the Remington Arms Co., Inc.; and Milton Kutz has been appointed assistant general manager of the department to succeed Dr. Rykenboer.

Dr. Rykenboer held important positions in the Roessler & Hasslacher Chemical Co. before it was taken over by the du Pont company. He was first general superintendent and later vice president of that company.

Since the R. & H. Chemicals Department was created in the du Pont company, he has been assistant general manager.

Mr. Kutz, who becomes assistant general manager of the R. & H. Chemicals Department, was successively branch office manager, general sales manager, and vice president and manager of sales in that organization.

Since the formation of the R. & H. Chemicals Department in the du Pont company, he has been director of sales.

## MUSKEGON BUSINESSMEN GO THROUGH NORGE PLANT

MUSKEGON, Mich.—The Muskegon Heights Board of Trade was taken on a tour of inspection through the Norge factory here June 6.

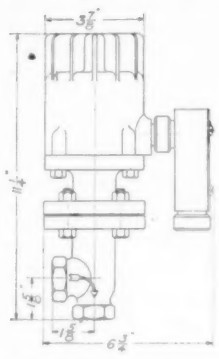
In addition to witnessing the various processes which go into the making of Norge refrigerators, the board visited the department where Economaid washing machines are manufactured.

## *Frick Announces New Electric Valves*

WAYNESBORO, Pa.—An electrically operated automatic packless valve has been designed by engineers of the Frick Co. here for use as a shut-off in either liquid or suction lines of commercial refrigerating plants with one, two, or more low sides to control, or as a compressor by-pass.

The valve is operated from a thermostat or relay, and can be installed inside or outside the space being cooled, the designers state. It is applicable to ammonia, methyl chloride, or freon systems, and can be used to control brine or circulating water.

### *New Frick Valve*



New Frick electric control valve, angle style, for either brine or the common refrigerants.

The new valve is opened and closed by action of a plunger working inside a magnetic coil. The plunger is enclosed in a gas-tight tube which extends clear through the magnetic coil, so that a packed sliding joint around the valve stem is unnecessary.

Cutting of the hardened seat is avoided, Frick engineers claim, because the valve is always either wide open or tightly closed. When closed, pressure of the liquid or gas behind the valve keeps it tight, they explain.

**Use Auxiliary Port**

Three largest sizes of the new valves are arranged so that pressure is relieved by an auxiliary port while opening; when open the main valve then provides full valve area.

The electric coil is wound for 110 or 220 volts in 25-, 50-, or 60-cycle alternating current, or for 32, 115, or 230 volts of direct current. Heat generated in the coil is dissipated through fins cast in the cover. Provision is made to turn the finned cover so that it will stand vertically above the line from any of four directions.

A step-down transformer is used to reduce alternating-current voltages of 440 or 550 volts to a lower voltage for the valve's coil and for the holding coil on a compressor's starter.

**For Compressor By-Pass**

An interesting application of the valve is for an unloader for automatically opening the by-pass of compressors during starting, Frick engineers point out.

In plants where more than one compressor is used, or where automatic starting is done, and the motor has a low-starting torque (as a synchronous motor), it is frequently desirable to relieve the head pressure on compressors in starting. This is especially true in places where power interruptions are common, they explain. When automatic starting of the compressor is employed, a check valve is also installed on the discharge line, between the machine and the condenser.

## NEW AUTOMATIC DEVICE STARTS LIGHTS AT NIGHT

EAST PITTSBURGH, Pa.—"Photolux" is the name given to a new device placed on the market by Westinghouse Electric & Mfg. Co. which turns electric lights on or off, depending upon the amount of daylight. When a predetermined intensity of light is reached, the lights go off; when the skies darken, lights go on.

Panelboard cabinets for flush or projection mountings are used to contain the indoor models of "Photolux." The case is provided with locks, and with knockouts on all sides. Room for wiring is left inside the cabinet.

The device is expected to be useful in regulating factory, school, and office lighting. In connection with electric signs and display windows, "Photolux" is said to make for economical operation of the lights, as well as the maximum in advertising value.

## *Insulation Firms Start Technical Committee*

CHICAGO—Eleven companies, constituting the Insulation Statistical Bureau, have organized a technical committee to deal with technical phases of the manufacture and use of fibre insulating boards.

The committee consists of E. C. Lloyd, chief engineer, Armstrong Cork & Insulation Co.; R. T. Miller, chief engineer, Masonite Corp.; E. W. Morrill, assistant to general sales manager, Insulite Co.; C. K. Roos, manager research department, United States Gypsum Co.; and T. B. Munroe, Celotex Co., chairman.

General functions of the committee include the following five specified activities:

1. To acquire and circulate data of technical nature which affects the insulation board industry.

2. To associate itself with assistance such as American Society of Testing Materials, National Committee on Wood Utilization, etc., or the technical department of any member company.

3. The study of standards and specifications of insulation board in manufacture and in use. This to include the study of sizes, thicknesses, specifications for various uses.

4. To collect through its members all building codes affecting fibre board industry and report to the bureau with recommendations for action thereon.

5. Keeping contact with various government departments and following government specifications of a technical nature so as to make recommendations regarding government specifications as affecting the products of members.

Companies constituting the bureau are: Armstrong Cork Co., Celotex Co., Insulite Co., Johns-Manville Co., Masonite Corp., National Gypsum Co., Stewart Inso-Board Corp., U. S. Gypsum Co., Upson Co., Wood Conversion Co., Wood Fibre Board Corp., and Hawaiian Cane Products, Ltd.

## SMALL PUMP MOTOR BROUGHT OUT BY G. E.

SCHENECTADY, N. Y.—A new single-phase, fractional horsepower motor, specially designed for driving small water pumps, has been developed by the General Electric Co.

Features of the new motor, which has been designated as type RSA, are drip-proof end flanges to prevent dripping water from entering the motor, a large bearing-oil capacity which makes oiling of the motor unnecessary more than once a year, and a built-in terminal box for simplifying installation by eliminating the necessity for splicing and soldering connections, G. E. engineers claim.

The performance characteristics of the motor are in accordance with Nema standards for short annual service. The motor is available in 1/6-, ¼-, and ⅓-hp. ratings, with interchangeable mounting dimensions.

In addition to water pump service, this motor is readily adaptable to such applications as beer pumps, oil and grease pumps in service stations, certain types of circulating pumps, small machine tools, and other devices requiring similar load characteristics.

## LARKIN TELLS NAPRE ABOUT FINNED COILS

*(Concluded from Page 1, Column 1)*

ture of 87.8° F., the vapor cannot be liquefied, and the dense vapor does not yield normal refrigerating capacity in the system.

In installing a $CO_2$ system, the number of valves and fittings should be kept down to minimize leakage, the speaker pointed out, and welded joints used where possible. A soap solution is used to locate leaks.

Inexperienced operators sometimes have difficulty keeping the stuffing box of a $CO_2$ compressor piston rod gas-tight, he said. "Frequent tightening should be avoided. During the first few months the gland should be tightened by hand only, and it should be slackened off when starting up, to prevent cutting the rod," he advised.

Next speaker was Mr. Larkin, accompanied by George W. Mathews, both of the Larkin Refrigerating Corp., Atlanta, Ga.

Tracing the development of Larkin coils, Mr. Larkin said that his original work had been with closed cubical brine tanks containing flues 3x3-in. or larger to get 50 per cent vertical surface, but that this method was entirely inadequate for moisture-laden atmospheres such as found in Florida.

**Increased Surface Area**

By successively increasing the surface from 50 to 100 per cent, he discovered that more economical operation, and improved relative humidity could be obtained. The term 100 per cent vertical surface means that the cooling surface (tubing and fins) equals the total exterior six surfaces of the space being refrigerated (regardless of the amount of insulation used), he explained.

Largest expansion tubing now being used in Larkin coils is ⅝-in. outside diameter, he said. For ammonia, the tubing is made of aluminum. Using gravity circulation, the coils are being used with electric refrigerating machines from ¼ to 2 tons of ice melting effect per day.

The extensive cooling surface permits operation with a refrigerant temperature only about 10° F. below air temperature in the cabinet, he claimed, preventing undue dehydration, and keeping loss of moisture from food products down to a range of 1½ per cent.

**Frosting Not Serious**

Since the usual temperature for food stores is above 32° F., the formation of frost on the aluminum fins, spaced ½ in. apart, is very slight, and disappears intermittently, he declared. Mr. Larkin has devised controls which permit different box temperatures to be carried from a single suction pressure. These employ a solenoid valve to shut off the suction gas from a box when it gets cold enough. Thermostatic expansion valves are used.

At the close of Mr. Larkin's talk, President Lehman of the section exhibited a sample of a new Knickerbocker sheet metal cooling fin, 8½-in. square, galvanized, and built in halves to be clamped firmly on 2-in. direct-expansion pipes to increase their air-cooling surface with small expanse. These are placed 24 in. apart, although closer spacing would give better results, he said.

After adjournment, Fred H. Reader treated the group to helpings of egg nog ice cream, refrigerated with solid carbon dioxide.

"Delivered As Promised!"

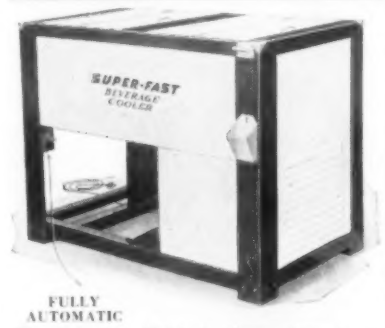
That sentence can go on every confirmation of delivery from WOLVERINE even now in this great rush! The refrigeration industry has never had to wait for us—on delivery or on quality. We lead! 100% Dehydrated and Sealed—or Open End—Plain or Tin Plated—in 25, 50 and 100 ft. coils *from stock* or longer to order. Wolverine Tube Company, 1491 Central Avenue, Detroit, Michigan. Sales Offices in 29 cities. Export Dept., H. M. Robins Company, Madison Bldg., Detroit.

WOLVERINE
*Seamless Copper Tubing*
For Refrigeration

NEWS EXTRA

NEW BEER COOLER OFFERS BIG SALES OPPORTUNITY

*THE SUPER-FAST*




FULLY AUTOMATIC

The Super-Fast Model A, shown above, is as handsome as it is efficient. Cools 192 twelve-ounce bottles in sweet water bath. Attractively chromium-plated brass hardware (rust-proof). Can be purchased for less per day than ice. Costs only few cents a day to operate. One of nine outstanding Super-Fast models. Latest type mechanical unit.

EXCLUSIVE FEATURES, LOW PRICES ATTRACT BUYERS

Here it is—the beer cooler you've waited for. Consider its new features—its handsome appearance—its reinforced all-steel construction—its amazing capacity for cooling 84-degree beverages to 38 degrees in exactly 30 minutes. No wonder the Super-Fast offers an outstanding sales opportunity.

The Super-Fast is designed and built by experts. It is the lowest-priced quality cooler on the market. There are nine models—six mechanical and three ice refrigerated. Capacities range from 60 to 192 twelve-ounce bottles. Constant temperature is maintained day in and day out—never a trace of "skunky" beer.

The Super-Fast is destined to be a big seller—the meter-purchase plan makes many sales easy to close. Desirable territories are open in all parts of the country. Act today.

WRITE, WIRE OR PHONE
ELECTRIC BEVERAGE COOLER CO.
421 South Delaware Street • Indianapolis, Indiana

# BEER COOLING

## ENGINEERS DESCRIBE ZAHM BEER COOLERS

CHICAGO—Mechanics of the Zahm controlled-pressure beer-drawing and cooling system, designed to eliminate the tendency of beer to foam unduly when served, have been explained by engineers of Liquid Carbonic Corp., Chicago company which employs the Zahm system in its beer-serving equipment.

To brewers this foaming tendency is known as "wild beer," a condition which follows the rolling of a new barrel into position and tapping it. Wildness also develops in drawing from the barrel through pipes and coils and to the glass, it is pointed out.

**Operating Features**

Besides elimination of wild beer, other advantages claimed for the Zahm system are: faster drawing (one draw filling a glass with the right collar with no return for refill), temperature uniformity, and reduction of waste. Supply of beer in the serving system will not spoil overnight, Liquid Carbonic engineers claim, and waste of "pressure squirts" when the faucet is first turned on are avoided.

Operating principle of the Zahm system is explained as follows:

Instead of coils led through the cooler, a silver-lined tank or cylinder 30 in. high and 6 in. in diameter holds the beer. This is the Zahm unit installed within the insulated walls of the cooler. Here, it is direct iced, or electrically refrigerated as desired.

**Beer Drawn from Bottom**

The incoming supply of beer enters the tank near the top, settles, cools, and is drawn off quietly from the bottom.

Heart of the whole system is the Zahm counter-pressure valve at the top of the unit. By this automatic valve beer is allowed to flow at the same pressure at all times regardless of the condition of beer in the barrels. Constant regulated pressure overcomes the problem of the different collar provided on a glass from a half empty barrel compared with a glass from a full barrel, Liquid Carbonic engineers declare.

The three-gal. capacity of the unit keeps a supply of cooled beer ready for rush orders. Warm beer at the top constantly replaces cold beer drawn from the bottom. Even with steady withdrawal of the entire supply, the new beer has been cooled below 40° F. when it emerges at the bottom, it is claimed.

**Cleaning**

With the Liquid-Zahm system it takes a few minutes to remove and replace the top of the unit. With it open full access is then given to the silver-lined walls for the cleansing job.

While this system of cooling and tapping beer is independent of the means used to force the flow, its function is to regulate the head of pressure. Among the available means for lifting beer the carbonic gas method is favored by Liquid Carbonic engineers.

During the fermentation which takes place in the manufacture of beer, for every pound of alcohol produced, over 0.95 of a pound of carbon dioxide gas is generated. While the greater part of this gas escapes, the beer is always saturated with it, they point out. Thus, the presence of carbon dioxide in beer is a natural fact.

## BEER EXPOSITION SET FOR SEPT. 2-9 IN CLEVELAND

CLEVELAND—The week of Sept. 2 to 9 has been set for the first American Beer exposition, originally scheduled to be held July 1 to 8 in the Cleveland Public Auditorium.

According to management of the exhibit, manufacturers of dispensing equipment, kegs, bottles, steins, refrigerating equipment, trucks, and other apparatus used for distribution of beer are being invited to exhibit their products.

## NEW COMPANY ORGANIZED TO MAKE WELDERS

BAY CITY, Mich.—National Electric Welding Machines Co. has been organized here to succeed the Valley Castings & Pattern Co. The new company will manufacture standard and special resistance welding machines.

E. C. Smith, former manager of the Valley firm, is president and general manager of the new organization. J. R. Brueckner will be vice president in charge of sales; C. E. Shearer will be in charge of advertising; Howard C. Cogan, chief engineer; and W. L. Mueller in charge of production.

## *Binks Announces New Pumps For Beer*

CHICAGO—Two new automatic beer pumps have just been introduced by Binks Mfg. Co. here, to be used to furnish air pressure for beer-dispensing equipment.

The pump, or air compressor, builds up a pressure of from 25 to 40 lbs. in a steel tank on which the compressor is mounted. The apparatus is provided with an electric cut-out switch which maintains a minimum pressure of 25 lbs., and a maximum of 40 lbs.

Since only 12 to 15 lbs. of pressure are required in the beer kegs, a reducing valve or regulator is employed to maintain the desired beer-serving pressure. This pressure is shown on an indicating gauge.

The beer pumps are intended for installation with air lines running to the kegs to impose a pressure over the beer storage. Beer lines are installed to bring the liquid from the bottom of the kegs up to the serving station. When one keg is emptied, air and beer lines are closed to it, and opened to another.

Smaller model No. 30-B is designed for back-bars and places where space is limited. This model has a 1/6-hp. motor, weighs 100 lbs., and stands 20½ in. high, 10 in. wide, and 24¾ in. long. List price with a 60-cycle motor is $64.50.

The larger model, No. 230, will operate from one to eight spigots, Binks engineers claim, and uses a ¼-hp. motor. Unlike the smaller horizontal machine, model 230 employs a vertical tank with the compressor mounted on top. It weighs 109 lbs., and lists at $79.50 with a 60-cycle motor. Dimensions are 41½ in. high, 14 in. wide, and 24 in. long.

# CATALOGS

**Century Motors**

Century Electric Co., St. Louis, has just brought out a four-page leaflet for prospective purchasers of its equipment. Illustrations of Century splash-proof motors, and summarized advantages of the line, make up the pamphlet.

**R & H Price List**

Quarterly price list of R & H Chemicals is now available. Individual pages scattered through the booklet tell advantages of various R & H products, and announce other literature published by the company on Duozinc plating and fumigation.

**Westinghouse Gearmotors**

Dealing with the complete line of Westinghouse single- and double-reduction gearmotors, a new eight-page booklet has been published by Westinghouse Electric & Mfg. Co.

Several applications of the motors, as well as detailed views of each model, are shown in the illustrations. There are also tables of output speeds for each model.

Another revised publication, "Westinghouse Multispeed Gearmotors" includes tables for horsepower rating, and speed tables for motors from ½ to 15 hp. ratings.

**Stebbins Linings**

Stebbins Engineering & Mfg. Co., Watertown, N. Y., maker of acid, alkali, and corrosion-resisting linings for industrial equipment, has published a folder describing its specialized lining service.

**Westinghouse Equipment**

Colin K. Lee has prepared an illustrated resume of "Engineering Achievements of 1932" by Westinghouse Electric & Mfg. Co.

Among the year's building projects having Westinghouse equipment are Rockefeller Center, the dirigible Macon, Chicago Post Office, Steamships Manhattan and Mariposa, House of Representatives new office building, and Boulder Dam. The booklet also outlines advances made in design and efficiency of turbines, large condensers and transformers, lightning defenses, generators, supervisory control equipment, circuit breakers, mercury-arc rectifiers, testing dyamometers, fractional horsepower and split-phase motors, annealing and baking ovens, electrical instruments, hoists, and photo-electric cells.

Developments such as the new Safe Harbor hydro-electric plant, and in the field of air conditioning, radio, electric kitchen aids, electric heating, outdoor lighting, paper-mill equipment, doctors' and dentists' appliances, are also recorded.

## BORDEN TRUCK HOLDS TWO TEMPERATURES

SANTA BARBARA, Calif.—A combination ice cream and milk delivery truck, one of the first vehicles of its type, has been put into service by Enterprise Dairy Products, a Borden subsidiary operating in this part of California.

The front compartment of the body carries 150 gal. of ice cream. Solid carbon dioxide is used for refrigeration, 8 in. of Dry-Zero insulation being installed in the roof and 7 in. in the walls. The remainder of the body is equipped for carrying milk.

Useless weight was kept as low as possible, according to claims of the builders, the California Motor Coach Co. The body's total weight, including the cab and accessories, is 2,540 lbs. The body is mounted on a Chevrolet chassis.

## COPELANDS INSTALLED ON 40 MILK TRUCKS

ST. LOUIS—Pevely Dairy of this city has recently installed Copeland refrigeration systems in 40 of its trucks which bring milk from the farms to its plant, according to H. S Schiele, vice president, Artophone Corp., Copeland St. Louis distributor, which handled the sale.

## KELVINATOR COOLS BEER FOR LUNCHROOM

SALEM, Mass.—Beer-cooling equipment, installed by Almy, Bigelow & Washburn, Kelvinator dealer, will chill brew for patrons of the Rogers Lunch here.

An FB-121 condensing unit, an XO-71 coil, and a 30B2 Temprite cooler make up the equipment.

SEEPAGE PROOF
PIPE AND TUBE
FITTINGS

For 25 years past this organization has delivered the ultimate value in fittings for the automatic refrigeration industry.

In design, metallurgy, thread tolerances, tube seat fits, appearance and inspection Commonwealth fittings have always excelled.

Now that new forms are being required, particularly as applied to fittings for connecting block tin tubing, Commonwealth, as always, is ready to supply the demand.

Quotations promptly on receipt of sample, sketch or blue print.

*Stock patterns are described in our catalog No. 36. Send for your copy.*

BUILT RIGHT TO STAY TIGHT

COMMONWEALTH BRASS CORPORATION
COMMONWEALTH AVE. AND G.T.R.R.
DETROIT

BACK UP YOUR CABINETS WITH
RIGID TEMLOK

HERE'S PROOF *of the rigidity of Armstrong's Temlok Insulation. It's easy to cut the name "Temlok" right out of a piece of this new improved, low cost refrigerator insulation.*

*Add strength and long life to frames this way*

WOMEN are demanding better refrigerators today. They're asking for maximum operating economy. How can you increase efficiency without adding to production costs?

Here is a suggestion, Mr. Manufacturer, that may help you solve the problem . . .

Make sure that the insulation fits tightly to the frame. You can be sure of an air-tight contact between the insulation and the inner crock if you insulate with *rigid* Armstrong's Temlok. Made from the heartwood fibres of southern pine, efficient Temlok Insulation gives "backbone" to the cabinet walls. It cannot settle or pack. Vibration or accidental jarring cannot shake it down. The possibility of air vents or moisture pockets is eliminated. With Temlok, your cabinet is assured *lifetime* insulation.

But that's not all. Armstrong's Temlok offers these added profitable advantages. Temlok speeds up assembly because it comes to your plant cut to size in fabricated sets. It's light, too . . . easily handled and quickly installed.

Would you like samples and complete data about Armstrong's Temlok? Information, too, about the facilities available to you through Armstrong's Life Test Room? Fill in and mail, today, the coupon below. Armstrong Cork & Insulation Company, 917 Concord Street, Lancaster, Pennsylvania.

ARMSTRONG CORK & INSULATION CO.
917 Concord St., Lancaster, Pa.

Please send me complete details regarding Armstrong's Temlok Refrigerator Insulation.

☐ Please send sample.

Name .....

Street .....

City ..... State .....

**Testing Service**
for Domestic and Commercial Electric Refrigeration

[ Testing and experimental laboratory service for Manufacturer, Distributor, Central Station. Test data exclusive property of client. ]

**Electrical Testing Laboratories**
80th St. & East End Ave.
New York

**Artic**
REG. U.S. PAT. OFF.
(R & H Methyl Chloride)
The IDEAL Refrigerant

Meets all Demands of Modern Household And Commercial Units

- Small volume displacement per unit of refrigeration.
- Non-corrosive to ordinary equipment, even if moisture is present.
- Very stable at operating temperatures.
- Easily handled and serviced.

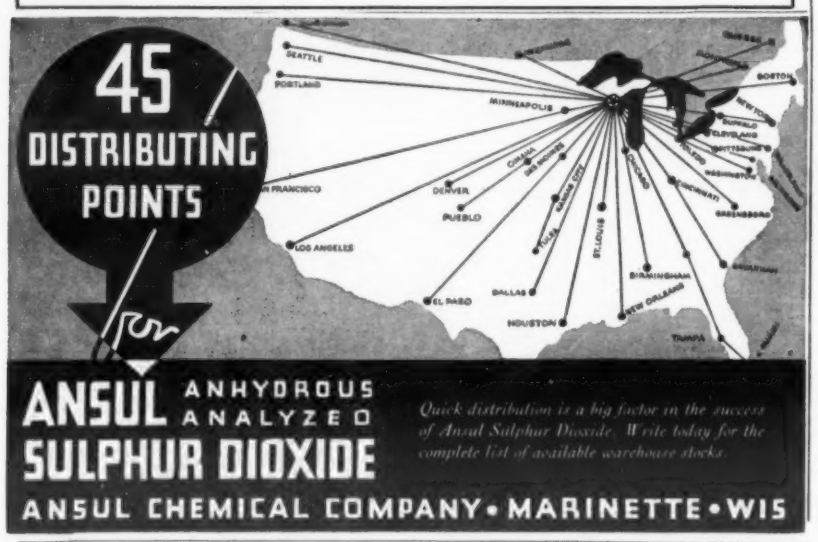
Write for further information and prices.

E. I. Du PONT DE NEMOURS & COMPANY, INC.
The R. & H. Chemicals Dept., Wilmington, Del.
District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, San Francisco
DU PONT

BUSH INDIVIDUAL FIN COILS CAN BE SHIPPED PROMPTLY WITH ANY NUMBER OF TUBES HIGH OR WIDE AND IN LENGTHS UP TO 12 FEET.

THIS FLEXIBILITY MAKES FOR INSTALLATION ECONOMY AND BETTER REFRIGERATION. SEND FOR BUSH CHART A2000 AND LIST PRICES.

THE BUSH MFG. CO., HARTFORD, CONN.

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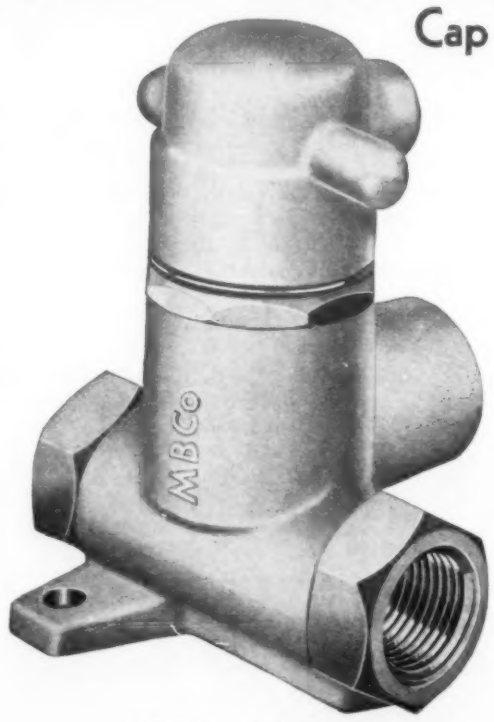
*Quick distribution is a big factor in the success of Ansul Sulphur Dioxide. Write today for the complete list of available warehouse stocks.*

ANSUL CHEMICAL COMPANY • MARINETTE • WIS

**MUELLER Double-Packed Operating Valve with Seal Cap and Integral Operating Wrench**
**FOR HEAVY DUTY**




AY-13181 Code-Sturbig

This valve is the answer to the need for an extra sturdy valve for large commercial installations and for air-conditioning work.

Its openings are FULL FLOW, assuring unrestricted passage of the refrigerant up to and including 5/8" O. D. diameter tubing.

It is double-packed and incorporates the back-seating feature. The body, which is extra heavy, and the seal cap are of forged brass; the stem is of Tuf-Stuf, a corrosion resisting alloy of great strength. The mounting plate is integral with the body.

The packing is not affected by heat or any other of the refrigerants in general use and may be replaced with the valve under pressure without loss of refrigerant or interruption of service.

*Note—Mueller AY-13181 is one of the new line of* full flow valves, *fully described and illustrated in our new catalog, R-2. Send for your copy.*

**Mueller Brass Co.**
PORT HURON, MICHIGAN

Mueller Brass Co. Valves and Fittings are approved by the Underwriters' Laboratories of Chicago

We manufacture a complete line of valves and fittings and can supply your every requirement

# PATENTS

## ISSUED MAY 23, 1933

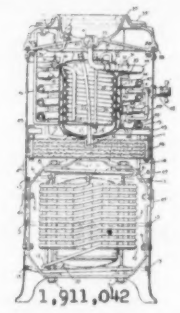
(*Continued from Last Week*)

1,911,012. REFRIGERATING APPARATUS. George A. Buvinger, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Feb. 28, 1930. Serial No. 432,114. 7 Claims.

1. Refrigerating apparatus comprising in combination a circuit for volatile refrigerant and a compressor connected to withdraw gaseous refrigerant at low pressure from said circuit and to discharge gaseous refrigerant at high pressure to said circuit, said compressor including a cylinder, a valve plate forming a wall of the cylinder and a discharge valve cooperating with said plate, the plate having a passage formed therein, and said circuit being connected to discharge low pressure gaseous refrigerant through said passage to the intake of said compressor.

1,911,042. REFRIGERATING APPARATUS. Christian Steenstrup, Schenectady, N. Y., assignor to General Electric Co., a Corporation of New York. Filed March 11, 1932. Serial No. 598,198. 15 Claims. (Cl. 62—141.)

1. Refrigerating apparatus for cooling water including a cooling unit, a helically coiled pipe arranged about and encircling said cooling unit for supplying water


1,911,042

thereto, means for directing cooled water from said unit for use, and a pipe for carrying away the cooled waste water, one of said pipes being jacketed by the other so that water supplied to said unit is precooled by said waste water.

8. In refrigerating apparatus for cooling water, a cooling unit having a water chamber, means for cooling said unit, a removable cover for said cooling unit, a cylindrical shell fitted in said cover, said cylindrical shell being disposed within said water chamber and closely fitting the inner wall of said cooling unit, the coacting side walls of said cooling unit and said cylindrical shell arranged to form a helical passage interconnecting upper and lower portions of said cooling unit, and means supplying water to said cooling unit so as to circulate through said helical passage in heat transfer relation to the refrigerant in said chamber.

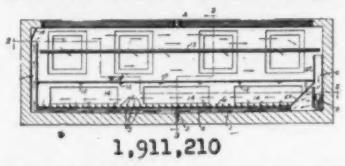
1,911,105. UNLOADER FOR COMPRESSORS. Leon Buehler, Jr., Waynesboro, Pa., assignor to Frick Co., Waynesboro, Pa., a Corporation of Pennsylvania. Filed Nov. 14, 1930. Serial No. 495,765. 6 Claims. (Cl. 230—22.)

1. Means for reducing the starting torque of compressors which comprises a fluid passage connecting the discharge and the suction sides of the compressor, a valve in said passage, means operable independently of the compressor, for holding said valve open during the starting of the compressor, said means being stopped as the compressor reaches approximately operating speed, substantially as set forth.

## ISSUED MAY 30, 1933

1,911,210. REFRIGERATOR. Donald E. Rutishauser, St. Louis, Mo., assignor to Hussmann-Ligonier Co., St. Louis, Mo., a Corporation of Delaware. Filed July 18, 1931. Serial No. 551,643. 8 Claims. (Cl. 62—37.3.)

1. A refrigerator comprising a casing, means within said casing for supporting articles of food therein, an ice chamber within said casing, air-moving means for forcing air in proximity to said ice chamber and moving same through said casing, and means including conduits at opposite ends of said casing arranged in substantially vertical relation for controlling the


1,911,210

course of said air, the lower ends of said conduits being located in a plane lower than the ice chamber.

1,911,319. REFRIGERATING APPARATUS. Lewis R. Jackson, Louisville, Ky., assignor to Henry Vogt Machine Co., Louisville, Ky., a Corporation of Kentucky. Filed May 18, 1932. Serial No. 612,085. 13 Claims. (Cl. 257—64.)

1. In refrigerating apparatus, a stack of vertically superposed shells, fluid conducting headers at opposite ends of said stack, separate conduits connecting the opposite ends of said shells to said headers, and a valve in each conduit controlling the flow of fluid therethrough to provide for separation of any of said shells from the stack without stopping the flow of fluid through the remaining shells, a header between the heads of said stack, means for conducting gas from said header to each of said shells, and a valve in each of said means for controlling the flow of gas from said header.

1,911,361. REFRIGERATOR SHIPPING CRATE. Joseph H. Grande, Salinas, Calif. Filed Aug. 11, 1930. Serial No. 474,462. 4 Claims. (Cl. 217—5.)

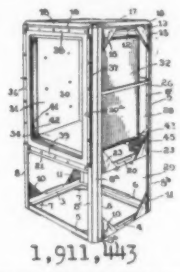
1. A refrigerator shipping crate having horizontal partitions interposed between horizontal layers of vegetables and cracked ice, such partitions having slit-form perforations.

1,911,432. REFRIGERATING APPARATUS. Frederic L. Chase, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Feb. 19, 1930. Serial No. 429,750. 7 Claims. (Cl. 217—17.)

5. For a refrigerator including insulating walls, the insulation of which is sealed against the condensation of moisture therein, a slab of insulating material compressed into a self-sustaining form and treated with a substance capable of preventing the penetration therein of the material used for sealing the slab.

1,911,443. REFRIGERATOR. Lewis W. Eggleston, Detroit, Mich., assignor to American Radiator Co., New York, N. Y., a Corporation of New Jersey. Filed Oct. 15, 1927. Serial No. 226,340. 8 Claims. (Cl. 220—9.)

3. A refrigerator of the character described, comprising a frame having corner posts, a partition carried by said posts


1,911,443

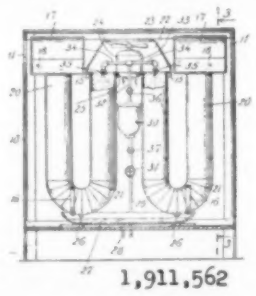
and dividing said frame into an upper and a lower compartment, a chamber element of smaller dimensions than said upper compartment and having an open side, a flange on said chamber element at said open side, said chamber element being positioned within said upper compartment with said flange overlying and fixed to certain of said corner posts, means carried by said partition and supporting said chamber element, panels enclosing said frame, one of said panels having an opening registering with the open side of said chamber element, and door means to close the open side of said chamber element.

8. A refrigerator of the character described, comprising a rectangular frame including corner posts, base members connecting said corner posts, top members connecting said corner posts, a chamber element positioned in said frame, means connecting said chamber element to said frame, vertical panels connected to said corner posts, corner strips overlying said corner posts and the side edges of said vertical panels, a top panel on said frame, and a bottom panel on said frame, said strips being secured in position by said top and bottom panels.

1,911,464. REFRIGERATING SYSTEM. Swan A. Pearson, Chicago, Ill. Filed April 12, 1929. Serial No. 354,479. 14 Claims. (Cl. 62—115.)

3. The combination with a refrigerating system, of a purging receptacle, a generally annular baffle forming a generally annular space within said receptacles, said baffle being closed at the top and open at the bottom to said generally annular space, a gas inlet line connected with the top of said generally annular space, a foul fluid outlet adjacent the top of the space within said generally annular baffle and a liquid outlet from the bottom of said receptacle.

1,911,562. AIR CONDITIONER. Edward L. Fonseca, Newark, Edward McK. Hunt, Montclair, N. J., and Marvin C. Barnum,


1,911,562

Minneapolis, Minn., assignors to The Wilcolator Co., Newark, N. J., a Corporation of Delaware. Filed July 26, 1929. Serial No. 381,204. 12 Claims. (Cl. 261—116.)

1. In an air conditioning device, the combination of an enclosure, air intake and outlet louvres therefor, a tube of substantially uniform cross-section mounted therein, an intake casing connected to one end of said tube and indirectly communicating with said intake louvre through said enclosure, the other end of said tube communicating directly with said outlet louvre, and means producing a liquid spray in the intake end of said tube for creating a current of air in said intake louvre, through said tube and out of said outlet louvre.

1,911,605. INSULATING CONSTRUCTION. Dean Holmes Corlette, Chicago, Ill., assignor to The Wood Conversion Co., Cloquet, Minn., a Corporation of Delaware. Filed Sept. 10, 1930. Serial No. 480,967. 17 Claims. (Cl. 154—44.)

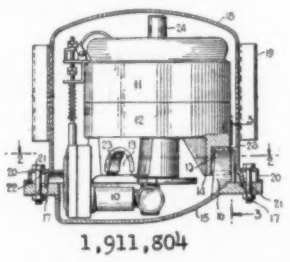
1. An insulation unit comprising in combination a compressible thick sheet-like filler body of insulation material having a normal thickness, and strip stiffening means having a width substantially equal to said thickness lying facewards against the edges of said body, said means serving to define the thickness of the unit and to prevent compression of the filler and of the unit faceways of the unit.

1,911,731. METHOD OF PROCESSING MATERIAL AND APPARATUS THEREFOR. Clarence W. Vogt, Louisville, Ky., assignor to Vogt Instant Freezers, Inc., Louisville, Ky., a Corporation. Filed May 13, 1929. Serial No. 362,654. 27 Claims. (Cl. 62—115.)

1. A refrigerating machine including a source of high pressure refrigerant, an expansion means for expanding said refrigerant to a lower pressure and increasing the velocity thereof, an accumulator for liquid refrigerant, a refrigerating surface, a conduit for liquid refrigerant between said accumulator and said refrigerating surface, a return conduit for refrigerant between said refrigerating surface and said accumulator, an ejector in said last-mentioned conduit operable by the velocity of the expanding refrigerant from said expansion means to augment the velocity of flow of refrigerant from the refrigerating surface, and means for bypassing a portion of said high velocity refrigerant to control the ejector effect thereof.

1,911,804. MOTOR COMPRESSOR MOUNTING. Elkann B. Carpenter, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a Corporation of Delaware. Filed Nov. 19, 1930. Serial No. 496,608. 5 Claims. (Cl. 230—235.)

1. In combination, a motor-compressor unit including a frame member having a plurality of recesses open downwardly, a


1,911,804

casing enclosing said motor-compressor unit which casing comprises a base portion and a cover portion, and a plurality of lugs extended upwardly from the base portion and adapted to fit within said recesses to support the unit within the casing so that the clearance space between the top of the unit and the cover is less than the depth of said recesses.

1,911,960. MAGNETIC CLUTCH. Carl E. L. Lipman, Chicago, Ill., assignor to Lipman Patents Corp., Chicago, Ill., a Corporation of Delaware. Filed Aug. 8, 1930. Serial No. 473,799. 2 Claims. (Cl. 172—284.)

1. In a magnetic clutch drive, a driving element, a driven element and a sealing casing enclosing one of said element, one of said clutch elements being in the form

(*Continued on Page 15, Column 4*)

**PATENTS**
Searches, Reports, Opinions by a Specialist in REFRIGERATION
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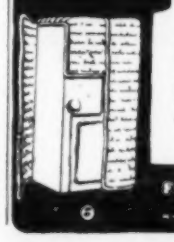

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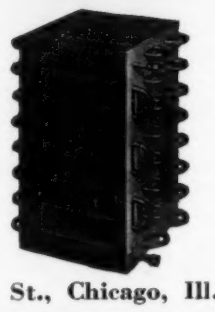

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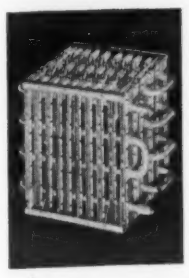

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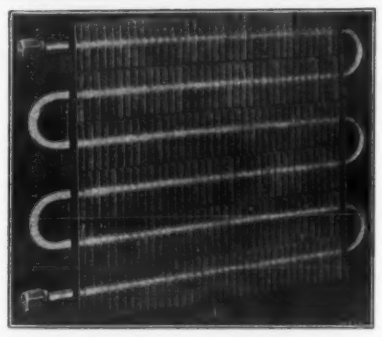

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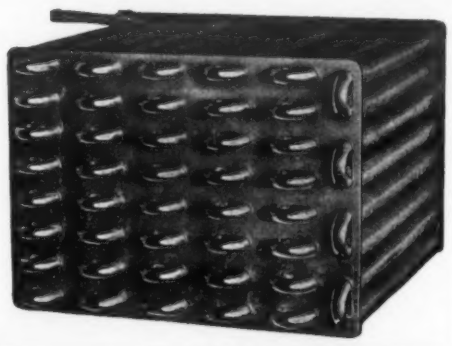

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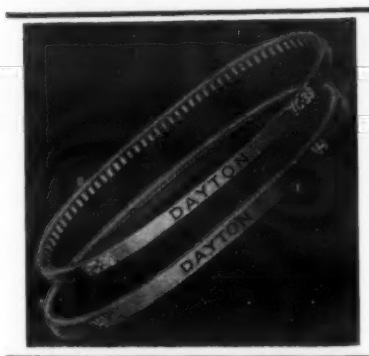

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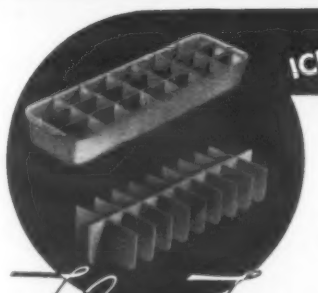

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# QUESTIONS

### Tax on Air Conditioners

*No. 1239* (Manufacturer, New York)—"We are wondering if, in view of your broad contacts with all matters pertaining to refrigeration and air conditioning, if you can tell us if we have to pay a factory tax on air-conditioning equipment?"

*Answer*—No, the 5 per cent tax is levied only on household electric refrigerators.

### Vegetable and Ice Cube Trays

*No. 1240* (Dealer, New Jersey)—"Will you please forward to us the names of manufacturers of vegetable trays, and flexible rubber ice trays?"

*Answer*—For vegetable trays, communicate with the Federal Enameling & Stamping Co., Pittsburgh, Pa.; for rubber ice cube trays—Inland Mfg. Co., Dayton, Ohio.

### Wants American Line of Supplies

*No. 1241* (Sales Agent, Spain)—"As you are probably aware, I am the exclusive distributor for the Leland Electric Co., Penn Electric Switch Co., and Fedders Mfg. Co., and have recently formed a special section of my business to deal with supplies for commercial and domestic electric refrigeration, as in connection with my other lines I have an organization covering the whole of Spain, to which I make periodical visits.

"To this end, I should appreciate being put in direct contact with those of your principal advertisers manufacturing such supplies, and shall be glad to receive and give consideration to offers from them."

*Answer*—We are asking several prominent manufacturers of refrigeration supplies to get in touch with you if they are interested in distribution in your country.

### Premium Thermometers

*No. 1242* (Dealer, Indiana)—"Can you advise me where to purchase thermometers with my name and address on them, suitable to hang in refrigerators of my customers, so that I will have my name before users of this equipment at all times."

*Answer*—Taylor Instrument Co., Rochester, N. Y.

### Solid $CO_2$ Household Refrigerators

*No. 1243* (Chicago)—"I am seeking information regarding the use of solid carbon dioxide for domestic and small commercial refrigeration. I understand that a household refrigerator called the 'Carba' has been introduced in Europe, and I am prompted to inquire if your magazine has published any information on this or any other refrigerator designed for use of solid carbon dioxide."

*Answer*—For a description of this refrigerator, see the Sept. 21, 1932, issue of ELECTRIC REFRIGERATION NEWS.

### Non-Electric Refrigerators

*No. 1244* (Exporters, New York)—"On behalf of one of our South African clients, we are interested in obtaining a source of supply for mechanical household refrigerators for use in districts where electricity is not available.

"Although we are aware that you specialize in the electric refrigeration field, it occurs to us that some of your advertisers might put out such a line, and if so we should be very pleased if you will put us in touch with them."

*Answer*—Refrigerators may be operated in non-electric districts from kerosene or bottled gas. For a kerosene-operated refrigerator, communicate with the Gibson Electric Refrigerator Corp., Greenville, Mich., maker of the "Kero-Unit."

The Electrolux refrigerator sold by Electrolux Refrigerator Sales, Inc., Evansville, Ind., is operative with bottled gases which can be transported in drums. Also, the Icy-Ball refrigerator manufactured by the Crosley Radio Corp., Cincinnati, Ohio, can be operated from practically any source of heat.

### Refrigeration Directory & Bellows

*No. 1245* (Distributor, Iowa)—"We note that you publish the REFRIGERATION DIRECTORY. Does this contain a list of manufacturers' parts, etc.? And what is its cost? Can you refer us to a manufacturer of bellows seals?"

*Answer*—The REFRIGERATION DIRECTORY and MARKET DATA BOOK, with October Supplement, bound in paper, sells for $1 per copy. On page 212 you will find a complete list of bellows manufacturers.

### Air-Conditioning Manufacturers

*No. 1246* (Jobbers, Iowa)—"Will you kindly advise what manufacturers other than Carrier and Frigidaire have air-conditioning equipment."

*Answer*—There are quite a number of companies, in addition to Carrier and Frigidaire, which manufacture air-conditioning equipment. For a complete list see page S116 of the Supplement to the REFRIGERATION DIRECTORY.

### Kerosene Refrigerators

*No. 1247* (Utility, New York)—"As subscribers to your publication, we would like to know whether your activities take in the field of absorption refrigeration units using gas or kerosene. If they do, we would very much appreciate receiving a list of technical articles on the subject that have been published during the past six months."

*Answer*—See the Jan. 4 issue of the NEWS which contains a description of Gibson's "Kero-Unit," and the March 29 issue which describes the new air-cooled Electrolux.

### Domestic Ice Cream Freezers

*No. 1248* (Food Manufacturer, New York)—"We are interested in learning of progress and plans under way in the design of a device to make ice cream in household electric refrigerators.

"We produce an ice cream preparation which enables the housewife to make an ice cream in the home. We have received numerous complaints from owners of standard types of electric refrigerators that the ice cream they make is very icy, which indicates to us a lack of proper agitation of the mix while in the refrigerator tray."

*Answer*—So far as we know, only two companies have introduced mechanically agitated ice cream freezers to fit in the evaporator of a household electric refrigerator. These are the Alaska Freezer Co., Inc., Winchendon, Mass., and S. M. Howes Co., 511 Medford St., Boston, Mass.

### Compressors

*No. 1249* (Manufacturer, Illinois)—"In connection with the sale of refrigerator meters which we manufacture, we are anxious to get in touch with three or four companies which make compressors for the refrigeration industry. We have been in contact with those manufacturing complete refrigerators, and are at present interested only in companies making and selling compressors."

*Answer*—See the REFRIGERATION DIRECTORY and MARKET DATA BOOK.

# PATENTS

(*Continued from Page 14, Column 5*)

of a hollow ring providing a substantially closed coil chamber having an open end, an end plate terminating in a plurality of pairs of alined spaced magnetic poles of opposite polarity, the opposed poles being arranged parallel to the axis of rotation of said clutch and surrounding said casing, a magnet coil disposed within said hollow ring, the other of said clutch elements being disposed within said casing and having a plurality of spaced alined poles parallel to the axis of rotation and projecting into proximity to the poles of the outer member.

1,912,065. ICE CUBE PAN. Michael Kerin Buchanan and Albert Graham Horton, Norfolk, Va. Filed July 3, 1931. Serial No. 548,655. 3 Claims. (Cl. 62—108.5.)

1. An ice cube pan formed of rigid non-metallic materials and a hard coating for the inner surfaces formed of metallic and non-metallic materials.

3. An ice cube pan, a relatively fixed grid member in the pan composed of transverse bars and a longitudinal bar fixed to the transverse bars, each of the transverse bars being provided with a plurality of transverse slots extending for a portion of the depth of the transverse bars, one of the slots in each transverse bar being located adjacent the longitudinal bar, a movable grid member composed of a plurality of longitudinal bars secured together and provided with a plurality of slots complementary to the slots in the transverse bars so that the movable grid member may be fitted into the relatively fixed grid member, and means for forcibly raising the movable grid member from the relatively fixed grid member when ice cubes have been formed in the pan for breaking the cubes from the pan and grid members.

1,912,066. REFRIGERATING APPARATUS. Frederic L. Chase and Stanley V. Cook, Dayton, Ohio, assignors to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed May 29, 1931. Serial No. 541,024. 3 Claims. (Cl. 62—108.5.)

1. Refrigerating apparatus comprising a flexible freezing container having self-sustaining properties adapted to contain a substance to be frozen, said container having an integral member separating said container into inner and outer freezing zones, said member dividing said outer freezing zone into a plurality of ice cube-forming chambers, said member being provided with openings in the outer freezing zone for establishing communication between said chambers and for increasing the flexibility of said container, and said member being arranged to prevent communication between said inner and outer freezing zones.

(*Continued in Next Issue*)

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